SMITHSONIAN INSTITUTION

UNITED STATES NATIONAL MUSEUM

REPORT ON THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDED JUNE 30, 1927

UNITED STATES
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WASHINGTON
1927

SOUTHEAST VIEW OF NATURAL HISTORY BUILDING, UNITED STATES NATIONAL MUSEUM

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UNITED STATES NATIONAL MUSEUM,
UNDER DIRECTION OF THE SMITHSONIAN INSTITUTION,
Washington, D. C., October 15, 1927.

SIR: I have the honor to submit herewith a report upon the present condition of the United States National Museum and upon the work accomplished in its various departments during the fiscal year ended June 30, 1927.

Very respectfully,

ALEXANDER WETMORE,
Assistant Secretary.

DR. CHARLES G. ABBOT,
Acting Secretary, Smithsonian Institution.

TABLE OF CONTENTS

	Page
Staff of the Museum	VII
Foreword	3
Operations of the year	5
Appropriations	5
Collections	7
Explorations and field work	9
National Sesquicentennial Exposition, Philadelphia	15
Special exhibition for the Smithsonian Institution	16
Educational work	17
Visitors	24
Publications	26
Library	27
Photographic laboratory	30
Buildings and equipment	30
Meetings and receptions	32
Changes in organization and staff	38
Detailed reports on the collections	41
Department of anthropology, by Walter Hough, head curator	41
Department of biology, by Leonhard Stejneger, head curator	51
Department of geology, by George P. Merrill, head curator	85
Department of arts and industries, and division of history, by William deC. Ravenel, director of arts and industries	99
List of accessions	133
List of publications issued by the United States National Museum	180
List of papers based wholly or in part on the national collections	195

TABLE OF CONTENTS

Staff of the Museum ..... Page
Foreword VII
Operations of the year 3
Appropriations 5
Collections 6
Explorations and field work 7
National Geographical Exposition, Philadelphia 8
Special exhibition for the Smithsonian Institution 12
Educational work 16
Visitors 17
Publications 24
Library 28
Photographic laboratory 31
Buildings and equipment 36
Meetings and receptions 39
Changes in organization and staff 42
Detailed reports on the collections 43
Department of anthropology, by Walter Hough, head curator 43
Department of botany, by Leonhard Stejneger, head curator 51
Department of geology, by George P. Merrill, head curator 56
Department of arts and industries, and division of history, by William deC. Harwood, director of arts and industries 60
List of accessions 123
List of publications issued by the United States National Museum 169
List of papers based wholly or in part on the material collections 185

STAFF OF THE UNITED STATES NATIONAL MUSEUM

[June 30, 1927]

CHARLES G. ABBOT, Acting Secretary of the Smithsonian Institution, keeper *ex officio*.

ALEXANDER WETMORE, Assistant Secretary, Smithsonian Institution, in charge United States National Museum.

WILLIAM DEC. RAVENEL, Administrative Assistant to the Secretary.

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Division of Old World Archeology: I. M. Casanowicz, assistant curator.

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Associate in historic archeology: Cyrus Adler.

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Associate in Botany: John Donnell Smith.

Associate in Marine Sediments: T. Wayland Vaughan.

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Division of Stratigraphic Paleontology: R. S. Bassler, curator; Charles E. Resser, associate curator; Jessie G. Beach, aid; Joseph A. Cushman, collaborator.

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Section of Paleobotany: David White, associate curator; Erwin R. Pohl, aid.

Division of Vertebrate Paleontology: Charles W. Gilmore, curator; James W. Gidley, assistant curator of mammalian fossils.

Associates in Paleontology: Frank Springer, E. O. Ulrich.

Associate in Petrology: Whitman Cross.

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Division of Textiles: Frederick L. Lewton, curator; Mrs. E. W. Rosson, aid.

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Section of Organic Chemistry: Aida M. Doyle, aid.

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Division of Graphic Arts: R. P. Tolman, assistant curator.

Section of Photography: A. J. Olmsted, custodian.

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Division of History: T. T. Belote, curator; Charles Carey, assistant curator; Mrs. C. L. Manning, philatelist.

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REPORT OF THE PROGRESS AND CONDITION OF THE UNITED STATES NATIONAL MUSEUM FOR THE YEAR ENDED JUNE 30, 1927

By ALEXANDER WETMORE
Assistant Secretary, Smithsonian Institution

By the death of Charles Doolittle Walcott, Secretary of the Smithsonian Institution, on February 9, 1927, the United States National Museum, of which he was the keeper by virtue of his higher office, has suffered a severe loss.

For 45 years Doctor Walcott was intimately associated with the work of the Museum. In 1882, while in the service of the United States Geological Survey, Doctor Walcott was appointed honorary assistant curator in the department of fossil invertebrates of the Museum having special charge of the Paleozoic fossils, and the next year he was made honorary curator of these collections, a position which he held until 1895, when all the paleontological collections of the Museum were centralized under his general administration as honorary curator.

When the Museum lost the leadership of the late G. Brown Goode, Doctor Walcott, in addition to his arduous duties as director of the Geological Survey, provisionally put at the service of the Smithsonian Institution his recognized scientific and executive qualifications, serving as acting assistant secretary of the Smithsonian in charge of the National Museum from January 27, 1897, to June 30, 1898, when a permanent successor to Doctor Goode was selected. During Doctor Walcott's administration the Museum was reorganized under three departments with a head curator in charge of each. In this reorganization the department of paleontology became the division of stratigraphic paleontology in the department of geology, and Doctor Walcott continued in charge as honorary curator until the division was divided in 1908.

In 1904 the Museum instituted a new department of mineral technology, under the curatorship of Doctor Walcott, to care for vast collections illustrative of the mineral resources of the United States received from the Louisiana Purchase Exposition in St. Louis, in

the selection of which Doctor Walcott, as director of the United States Geological Survey, had been instrumental. Doctor Walcott continued oversight of this department until 1913, when the Museum was able to employ a curator to devote full time to the subject.

On January 23, 1907, Doctor Walcott was elected Secretary of the Smithsonian Institution, and, by virtue of that position, became keeper of the National Museum. During the 20 years which have since elapsed Doctor Walcott has directed investigations in various parts of the world and personally studied large areas in the Rocky Mountains, particularly in British Columbia and Alberta, Canada, the vast resulting collections—the bases of his original researches—having materially enriched the National collections.

The work of the late secretary and his achievements will be recorded in another place and at another time. In this connection I only wish to express my sense of personal loss and my deep appreciation of the confidence he bestowed in committing to me the administration of the National Museum.

FOREWORD

The Congress of the United States in the act of August 10, 1846, founding the Smithsonian Institution, recognized that an opportunity was afforded, in carrying out the design of Smithson for the increase and diffusion of knowledge, to provide for the custody of the Museum of the Nation. To this new establishment was, therefore, intrusted the care and development of the national collections. At first the cost of maintaining this activity was paid from the Smithsonian income; then for a time the Government bore a share; but since 1877 Congress has provided for the expenses of the Museum.

The museum idea was fundamental in the organic act establishing the Smithsonian Institution, which was based upon a 12 years' discussion in Congress and the advice of the most distinguished scientific men, educators, and intellectual leaders of the Nation during the years 1834 to 1846. It is interesting to note how broad and comprehensive were the views which actuated the Congress in determining the scope of the Museum, a fact especially remarkable when it is recalled that at that date no museum of considerable size existed in the United States, and the museums of England and of the continent of Europe, although containing many rich collections, were still to a large extent without a developed plan.

The Congress which passed the act of foundation enumerated as within the scope of the Museum "all objects of art and of foreign and curious research and all objects of natural history, plants, and geological and mineralogical specimens belonging to the United States," thus indicating the Museum at the very outset as the Museum of the United States and as one of the widest range in its activities. It was appreciated that additions would be necessary to the collections then in existence, and provision was made for their increase by the exchange of duplicate specimens, by donations, and by other means.

The maintenance of the Museum was long ago assumed by Congress, the Smithsonian Institution taking upon itself only so much of the necessary responsibility for its administration as is required to coordinate it with its other activities. The Museum as a part of the Smithsonian is an integral part of a broad organization for increase and diffusion of knowledge, for scientific research, for cooperation with departments of the Government, with universities and scientific societies in America, and with all scientific institutions

and men abroad who seek interchange of views with men of science in the United States.

Since 1846 the only material changes in the scope of the National Museum have been (1) the addition of a department of American history, intended to illustrate, by an appropriate assemblage of objects, important events, the domestic life of the country from the colonial period to the present time, and the lives of distinguished personages, and (2) provision, in 1920, for the separate administration of the National Gallery of Art as a coordinate unit under the Smithsonian Institution. From 1906 to 1920 the gallery was administered as the department of fine arts of the Museum.

The development of the Museum has been greatest in those subjects which the conditions of the past three-quarters of a century have made most fruitful—the natural history, geology, ethnology, and archeology of the United States, which have been supplemented extensively by collections from other countries of the world. Opportunities for acquisition in these various directions in the first years of the institution were mainly brought about through the activities of the scientific and economic surveys of the Government, many of which have been the direct outgrowths of earlier explorations stimulated or directed by the Smithsonian Institution. Additions from these sources still continue in large volume. As supplemental to them an increasing number of persons interested in science make annual additions to our collections either directly or through financial support of expeditions by members of the staff. The increment of material from these contributions increases annually and is greatly appreciated. Such outside aid brings material that is of the greatest importance and that often could be obtained in no other way.

The Centennial Exhibition of 1876 afforded opportunity for establishing a department of industrial arts, which has received great impetus recently through the cooperation of industrial firms and associations, particularly in the assembling of material illustrative of historical development in various lines.

The historical series has been greatly augmented since 1918 by large collections illustrative of the World War, and also extensive additions to exhibits in aircraft and kindred subjects have been received during this period.

Public interest in the growth and development of the National Museum is reflected by the steady increase of recorded attendance, in correspondents, and in requests for information.

OPERATIONS OF THE YEAR

APPROPRIATIONS

Provision for the maintenance of the National Museum for the fiscal year ended June 30, 1927, was made in the following regular items of appropriation carried in the executive and independent offices act approved April 22, 1926:

Preservation of collections	$450,000
Furniture and fixtures	23,730
Heating and lighting	78,140
Building repairs	12,000
Books	1,500
Postage	450
Printing and binding	43,500
	609,320

The total sum represents an increase of $10,928 above the appropriation available for the year 1926. An increase of $8,918 under the main appropriation, that for preservation of collections, has included the addition of two assistants for the work of the library, and of one in the office of the assistant secretary in charge of the National Museum where no provision had been made for office staff in establishing the position. The remainder, $4,778, was distributed for the purchase of needed supplies, to cover the ever increasing bills for freight and other matters, including an additional allotment for the purchase of specimens. An additional amount of $1,930 under the heading of "Furniture and fixtures" covered one minor readjustment on the salary roll and the allotment of $1,870 for the purchase of materials utilized in housing the great inflow of new specimens for the collections. The sum of $580 under heating and lighting added to small sums gained by retrenchment in other expenses under this appropriation has permitted the employment of an assistant telephone operator to aid in the increasing work of our telephone switchboard.

The increases recorded have given certain relief but require considerable addition.

The matter of increased compensation for the staff of the entire Museum has become one of paramount importance since, with the exception of a small number on the shop forces, to the close of the fiscal year here under discussion there had been no provision made for increases in salary with efficiency in service since the establish-

ment of the reclassification act on July 1, 1924, though the routine surveys of efficiency required by law have indicated that except in a few instances the persons concerned showed such attention in the performance of assigned duties as to entitle them to this consideration. With no funds available for allotment for this purpose it has been impossible to make increases on this basis without addition to the appropriations.

To look ahead to a matter not properly included in the present report it may be said that the approriation for the year 1928 has carried additional items for one rate increases for the majority of the personnel. This step has given a measure of relief and has had a very favorable reaction on the part of the employees. It is felt, however, that this is but one step in the proper direction and that further allotments for the same purpose should be made. As a result of this readjustment on the salary roll the majority of the staff for the fiscal year 1928 will receive one rate more than the entrance salary established by law for their respective grades. To continue the intent of the reclassification act further funds for promotion should be provided until the salaries of the various groups attain the average established for the grade. It is earnestly urged that further additions to the appropriations be made until this object can be attained. To do this will provide only proper reward for the conscientious performance of duty on the part of the staff, while a better salary status will inevitably react favorably to the interests of the Museum.

Because of its status as a national organization the Museum has a tremendous scope in its scientific activities. It is expected that it shall maintain collections and be in a position to supply information in all the many branches concerned with natural science, as well as in the field of history and the manifold phases of industrial development. In its legal function as a depository of the national collections in all these varied branches it has expanded under necessity from modern development to a point where increases in the permanent staff are imperative. Modern science and knowledge whether concerned with some group of insects, shells, birds, or any other biological development, or with history or industry have become so complex and so varied and the knowledge available so great that exactness in dealing with all details demands division into smaller groups for study and mastery than in previous generations. Where 40 or 20 years ago one mind might compass exactly the information available in several fields it is now necessary for the scientist to restrict his activities within narrower limits to keep abreast of the steadily increasing march of human knowledge. Specialization demands closer attention. At the present time there are several groups of animals where we have extensive collections that have no

curator designated on our staff. In a number of divisions also there should be provided assistants for the older men who should be in position to train others to carry on their work when they are gone. In scientific research many years are required before competence is attained and much has to be learned by precept that is not available in any other way.

Existing appropriations are taken up so largely with necessary routine expenditures that there is little available to be used in exploration and field work. Many interested friends and correspondents make great additions to our collections annually, but the Museum should be provided with adequate funds that would enable it to develop various field researches along logical and continuing lines. Further, there come to the Museum frequent reports of valuable specimens that may be had if some one competent can go to the spot to obtain them. These are usually of such nature that they can not be collected and sent in by the inexperienced as unless properly handled they are not worth the cost of transportation, though when properly prepared they are highly valuable. At the present time this material is usually lost, though for a comparatively small expenditure it might be preserved. Funds that may be used for such purposes and for field work in general are urgently needed.

It may be added that in the United States to-day there is an increasing part of the population that is definitely interested in science. This is shown in the present demand for authentic scientific news on the part of the press, for photographs of interesting scientific objects for publication, and by the general attitude of the public. As our country grows there develops an increasing group of those financially independent who turn to scientific researches and investigations either as recreation or with serious desire to assist in addition to human knowledge, and who find in scientific matters relaxation and inspiration, recreation and serious endeavor. This group now assists tremendously in the furtherance of scientific development and will be an increasing force in that direction in the future. These persons from their financial situation make large contributions toward the Federal income in the form of taxes, and therefore it would seem logical to make a part of this money available for support of their immediate interests in the form of increased appropriations for the National Museum.

COLLECTIONS

Additions to the collections during this fiscal year have exceeded the average and in fact the materials received as a whole are among the most extensive that have come to the institution during a similar period. The increments were covered in 1916 separate accessions

which included a total of 402,531 separate specimens. The new material has included some of the most valuable collections that have ever been incorporated in our series. The specimens accessioned were divided among the various departments as follows: Anthropology, 12,974; biology, 198,279; geology, 176,781; arts and industries, and history, 14,497. The total increase in 1926 came to 254,032 specimens which, however, was below the average for recent years.

The large number for the year 1927 has been due to several extensive collections that have come to hand, among which may be mentioned especially the ethnological material from the Stirling expedition in the interior of New Guinea, including wonderful series from peoples practically unknown, the contributions of the National Geographic Society from the excavations at Pueblo Bonito, the collection of 20,000 beetles presented by Mr. John D. Sherman, valuable collections in various branches of natural history made by Dr. Hugh M. Smith in Siam, and the minerals in the Roebling and Canfield collections. Complete accounts of these and other specimens received will be found in the reports of the head curators which follow.

There have been received also 1,371 lots of material for examination and report, the larger part being geological. Some of this has been added to the collections, some returned to the senders, and a part discarded as not valuable for preservation.

During this fiscal year 3,717 specimens were sent out as gifts, mainly to educational institutions. Included in these were 6 sets of mollusks of 140 specimens each, and 27 sets to show the formation of soil through the weathering of rock each consisting of 16 specimens. Exchanges of duplicate material with other institutions and individuals amounted to 31,747 specimens for which many valuable additions were obtained for the collections. There were also 24,066 specimens loaned for study for the use of workers outside of Washington. The selection and preparation of this material, its packing and shipment, and its installation once more in the collections on its return constitute a tremendous task that takes much time and attention.

The following statement of specimens now covered in the Museum catalogues will be of interest:

Anthropology	668,312
Biology	7,727,552
Geology	1,890,255
Arts and industries	91,232
History	355,934
Total	10,733,285

EXPLORATIONS AND FIELD WORK

Field researches through the past year have been continued through special funds available from friends of the Institution or through a variety of cooperative arrangements. In spite of the restrictions thus imposed the work has been varied and highly productive in definite results. The Museum is handicapped through inability with present funds to take up many opportunities for field work that offer and it is important that money for such purposes be made available. At comparatively low cost much may be accomplished.

On June 1, 1927, N. M. Judd, curator of American archeology, on leave without pay, again proceeded to New Mexico as director of the National Geographic Society's Pueblo Bonito expedition. These expeditions have been maintained annually since 1921 at a cost, for field work alone, of more than $100,000 and the Geographic Society has presented to the National Museum practically all of the resulting collections, totaling 3,651 specimens. The current field season is planned primarily as an opportunity for preparation of the scientific report on the results of this work.

The field work of Dr. A. Hrdlička, curator of physical anthropology, in 1926 consisted of an extensive archeological and anthropological survey of Alaska. This is described in a preliminary way in a report published in the Smithsonian Exploration volume for 1926, while a more detailed report is in preparation. Work in Alaska and nearby Siberia begun many years ago by Smithsonian interests under the leadership of Kennicott, Dall, Nelson, and others is of the utmost interest and promise. During the present season H. W. Krieger, curator of the division of ethnology, visited certain areas along the Yukon, while H. B. Collins, jr., assistant curator, and T. Dale Stewart, aid in the division of physical anthropology, went north to Nunivak Island to explore certain old village sites. The results of these investigations will be given in the report for next year, as the close of the present fiscal year found these men out of close touch with Washington. Much is expected from their observations.

Among the important expeditions in which the Institution has cooperated has been that of Matthew W. Stirling, formerly assistant curator of ethnology on the Museum staff, and his associates in the interior of Dutch New Guinea. The work was carried on through private means supplied by Mr. Stirling and his companions and was finally developed as a joint enterprise with the Dutch Colonial Government. The principal object was to make anthropological and ethnological studies of the pygmy tribes, which it was expected to find on the higher slopes of the Nassau mountains with supple-

mental work among the Papuans of the lake plain. After establishing a base camp in May near the mouth of the Mamberamo River the party made reconnaissance of the interior by means of an airplane taken especially for that purpose. With a clear view of the courses of the streams that traverse the unknown interior it was possible to select the most direct route toward the final objective in the interior mountains. Following these preliminaries the expedition pushed ahead by means of boats up the Mamberamo to the Rouffaar and along that stream to a point where an overland journey was made into the country of the pygmies. The travel was hindered by heavy floods, and was beset with many uncertainties through difficulties attendant upon establishing contacts with the Papuans, who were excitable and nervous and fearful of the intention of the invaders. In the main, friendly relations prevailed and much valuable cultural material was obtained through barter with groups of hitherto unknown savages. The pygmies of the mountain slopes proved friendly and of entirely different disposition so that Mr. Stirling and his companions lived among them at ease without necessity for the constant guard required with the natives of the lake plain. The party completed its observations in December and retraced its long journey to the coast, embarking finally for Java. Shipments of specimens to the Museum consisted of 14 large cases containing thousands of implements from peoples living under the cultural conditions of the stone age. Thanks to the generosity of Mr. Stirling and his companions the National Museum now possesses one of the finest collections of the kind from New Guinea in existence. The work of the party has been of the highest importance in extending our knowledge of one of the few unknown areas remaining on the earth's surface.

The courtesy of the Dutch Colonial Government in cooperating in the scientific work, in providing steamer transportation both for the party and for subsequent shipments of supplies, and furnishing guards to safeguard camps and parties during travel was greatly appreciated. This assistance was of the highest importance to the success of the expedition.

During his second year under the Walter Rathbone Bacon scholarship, Dr. Waldo L. Schmitt, curator of marine invertebrates, continued field studies of the crustacean fauna of South America, principally on the west coast from Guayaquil, Ecuador, to Punta Arenas, Chile, including visits to the island of Juan Fernandez and the Falkland Islands, returning by way of Patagonia and Argentina. The collections brought to the Museum as a result of this year's studies are far larger than those of last year, due in part to a longer period in the field, and include several genera and one family of crustacea found for the first time on the west coast of South America. Doctor Schmitt left New York on August 19, 1926, arriving at Salaverry,

Peru, on the 30th of the same month. Until October 3 work was carried on at Guayaquil, Ecuador, and vicinity, and until October 25 near Salaverry, Peru. The time until November 10 was divided between Lima, Callao, and near-by localities. On November 29 he sailed in a schooner for the island of Juan Fernandez, landing on December 7 and remaining until December 27. There he observed one of the most productive of crustacean fisheries, that of the Juan Fernandez spiny lobster (*Palinurus frontalis*), besides making observations and collections of marine invertebrates and fishes. After visiting Valparaiso he proceeded to Concepcion, Talcahuano, and other points in Chile, collecting on the way, and arrived at Punta Arenas on January 26, 1927, where he collected until February 18. From there he took passage in a schooner for the Falkland Islands, where extensive studies and collections were made until the end of April, returning to Punta Arenas and leaving the latter port for Buenos Aires on May 2. The return was made by way of Montevideo, Santos, Rio de Janeiro, and New York, arriving in Washington on June 10. Doctor Schmitt gratefully acknowledges the valuable assistance and generous hospitality received from all authorities and a large number of private persons in South America and in the Falkland Islands.

Dr. Hugh M. Smith, director of the fisheries of Siam, honorary curator in zoology of the National Museum, continued field work in Siam. His explorations have resulted in splendid collections of mammals, birds, reptiles, amphibians, crustaceans, and insects which are now being studied with the keenest interest by specialists in the Museum. He himself will undertake the study of the fishes.

The Smithsonian-Chrysler African expedition to Tanganyika and Kenya, although undertaken to secure living animals for the National Zoological Park, resulted in additions to the Museum collections, since through the interest of Dr. W. M. Mann, director, specimens of birds, mammals, and miscellaneous invertebrates taken at odd times, when the naturalists of the expedition were not engaged with living animals, were secured and have been presented to our collections. The material is very welcome, since it includes valuable additions to our series from the section covered. The collection of birds preserved for dissection is especially notable.

On March 22, 1927, Dr. Alexander Wetmore, assistant secretary in charge of the National Museum, traveling under the Swales' fund, sailed from New York for Port au Prince, Haiti. Until the end of April he carried on field investigations in Haiti and then crossed to the Dominican Republic, finally sailing north from Puerto Plata on June 3. Through the interest of Dr. W. L. Abbott the Museum is in possession of extensive collections of birds, mammals, reptiles, am-

phibians, plants, and other specimens from Hispaniola. Doctor Wetmore's work in the field was planned with a view to supplement Doctor Abbott's material when necessary and to gather information on faunal areas and distribution that will be useful in the preparation of reports on the Abbott collections now under way. His work in Haiti, thanks to the interest of Dr. G. F. Freeman and other members of the Service Technique, was highly successful and included investigations in the vicinity of Port au Prince, in the southern peninsula, with the coffee experiment station at Fonds-des-Negres as a base, an exploration of the high La Selle, unknown zoologically until this visit, a trip to the interior plain at Hinche, a visit to the caves near St. Michel, famous for their bone deposits, and finally work at Caracol on the north coast.

In the Dominican Republic Doctor Wetmore worked principally on Samaná Bay and in the high interior in the valley of Constanza. His collections have included many items of interest. Among forms already described are a new species of thrush and a new genus of lizards from La Selle.

Owing to disturbed conditions in China, the activities of A. de C. Sowerby, under the auspices of Col. R. S. Clark, have been greatly curtailed. Nevertheless, he has succeeded in sending the Museum large and valuable collections, especially of reptiles and fishes, which have added notably to our series.

Clarence R. Shoemaker, assistant curator of marine invertebrates, under the auspices of the Carnegie Institution of Washington, during July and August, 1926, visited the Marine Biological Laboratory, at Dry Tortugas, Fla., for the purpose chiefly of making carcinological studies. More than 3,800 specimens of marine invertebrates were collected for the Museum.

Dr. P. Bartsch, curator of mollusks, in 1926 spent from August 10 to 21 at the Tortugas, and August 21 to 24 along the Florida Keys, examining Cerion colonies in continuation of his experiments in heredity with these organisms. A more detailed report on this work has already been published in the Smithsonian Exploration Pamphlet for 1926 (pp. 80–89). While at the Tortugas, Doctor Bartsch made experiments in the exposure of moving-picture film among the coral reefs undersea, securing a series of pictures showing faunal associations of marine organisms *in situ*. As in former years, he kept account of the birds observed from day to day.

J. M. Aldrich, associate curator of insects, before the close of the fiscal year departed on an expedition to the western part of the country for the purpose of making collections of insects, principally Diptera, in certain regions from which very few specimens have been received in the past. His itinerary was planned to extend to

California, returning through Nevada, Yellowstone Park, and the Black Hills.

Capt. R. A. Bartlett, a valued volunteer collector for the Museum, as a result of explorations off the northwest coast of Greenland in the summer of 1926, sent in 776 specimens of marine invertebrates.

Dr. W. R. Maxon, associate curator of plants, left Washington in May, 1926, for Jamaica and returned early in the following August. The exploration, which was made possible by a grant from the American Association for the Advancement of Science and the cordial cooperation of the New York Botanical Garden and the United Fruit Co., was conducted in the extreme eastern end of the Blue Mountain range and on some of the high peaks to the westward. The work was extremely productive in material for use in writing a proposed descriptive volume on the ferns of Jamaica, some 2,100 numbers (chiefly ferns) having been collected, many of these with numerous duplicates. The present collection, with material gathered during several previous trips, comprises an ample series of specimens showing local distribution, altitudinal range, and habital forms of most of the 500 fern species known to occur in the island. E. P. Killip, aid, and Albert C. Smith, collaborator, left Washington for Colombia in October, 1926, and returned in April, 1927, spending approximately six months in field work in the interior regions of that country. The expedition was organized through the cooperation of the New York Botanical Garden, the Gray Herbarium, the Arnold Arboretum, and Mr. Oakes Ames, with the National Museum. The greater part of the work was done in the general vicinity of Bucaramanga, in the Department of Santander, and along the Colombian-Venezuelan border in the Department Norte de Santander. Altogether some 30,000 specimens of plants were collected, representing over 7,100 collection numbers. The bulk of the material, and the portion which will prove most valuable, was obtained in the difficult mountain regions of the Bucaramanga district, a nearly unexplored area not previously visited by American botanists. The present is the third recent American botanical expedition to Colombia and the second in which Mr. Killip has participated in his project to prepare a report upon the plants of Colombia.

Prof. A. S. Hitchcock, custodian of the grass herbarium, spent about two months in the summer of 1926 collecting grasses in the Rocky Mountain region, and in November and December, in cooperation with the Tropical Plant Research Foundation, collected grasses throughout the island of Cuba.

Prof. H. H. Bartlett, honorary collaborator, left last autumn upon a year's botanical collecting trip in the East Indies. A considerable collection has already been received from Formosa and at last reports excellent results were being obtained in Sumatra.

Dr. W. F. Foshag, assistant curator of mineralogy and petrology, was in the field in Mexico from May 23 to late September, 1926, collecting minerals and ores and studying their occurrence at some of the chief mining centers. The localities visited were Los Lamentos, Santa Eulalia, La Ceja, Placer de Guadalupe, Cuchilla Parada, and Naica, in the State of Chihuahua; Sierra Mojada, in the State of Coahuila; and Velardena and Durango, in the State of Durango. This expedition, undertaken in collaboration with Harvard University, was highly successful, due largely to the hearty cooperation of the Mexican Government officials and American mining engineers in charge of the properties. Over two tons of material were collected from which representative sets have been selected for both Harvard and the National Museum.

A field trip by Dr. R. S. Bassler, curator of stratigraphic paleontology, through France and Germany during August and September, was most fruitful of material results. Two weeks were spent in a study of the Paris Basin in company with Dr. Ferdinand Canu, of Versailles, France, the most eminent student of microfossils on the Continent. Field investigations here yielded some valuable collections of microfossils, but a much larger and varied amount of material was donated by Doctor Canu from the results of his previous researches. Furthermore, Doctor Canu, to commemorate his long association with the paleontological work of the National Museum, presented his entire collection of French Cenozoic and Mesozoic fossils, numbering more than 100,000 specimens. Doctor Bassler visited in succession the Rhine Valley, the valley of the Main, the Early Tertiary areas around Münich, and the classic Mesozoic region north of the Hartz Mountains.

Doctor Resser spent August and September in field work in the Rocky Mountains, in continuation of the study of Cambrian stratigraphy under the direction of Secretary Walcott. He was assisted by Erwin R. Pohl, of the paleontological staff, whose special interest in the Devonian led him to secure good study collections from those strata whenever encountered. The work on the Cambrian was directed mainly to a determination of the section in Shoshone Canyon, west of Cody, Wyo., of various sections farther north in the Beartooth Range, and particularly a restudy of the famous sections north of Gallatin Valley in Montana. Here ample collections were obtained in strata from which the National Museum has previously had but a few fragments. Near the close of the season during several days' study of exposures in the Wasatch Mountains north of Brigham City, Utah, under the guidance of Prof. Asa A. Mathews, of the University of Utah, he obtained many instructive fossils of early Paleozoic age and important stratigraphic data. Previous to the work with Doctor Resser in the Rocky Mountains, Mr. Pohl was

detailed to continue his researches of the previous year on the Devonian rocks of New York and Ontario.

Under an allotment from the National Academy of Sciences Charles W. Gilmore was again enabled to visit the Grand Canyon of the Colorado. While the main object of this trip was to assist in the development of certain educational features of the canyon for the National Park Service, an opportunity was offered to make further collections of fossil footprints from the Supai formation, a level from which our collections are deficient. As a result of this expedition, Mr. Gilmore secured more than half a ton of footprints from both the Supai and the Hermit formations. A noteworthy slab of large size from the latter has the clearly impressed trackways of no less than three different kinds of animals on its surface and will make an unusually interesting exhibit.

In the early autumn of 1926 the Venice Co. of Venice, Fla., reported the discovery of fossil remains of a mammoth, and cordially invited the Smithsonian to send and recover the specimen. Dr. J. W. Gidley was detailed for this work which occupied 10 days. It was found that the bones all belonged to one individual of very large size, but the skeleton was by no means complete. However, the portions remaining were of sufficient value to amply repay the time and expense required to collect and preserve them.

Later in the fiscal year Doctor Gidley was detailed to visit Curtis, Okla., and Sarasota, Fla., in order to investigate reported finds of fossil remains. The visit to the first mentioned locality yielded remains of various Pleistocene mammals. At Sarasota and Zolfo Springs, Fla., a good collection representing a considerable fauna from the west coast was obtained.

NATIONAL SESQUICENTENNIAL EXPOSITION, PHILADELPHIA

As mentioned in the report of the Museum for 1926 the Smithsonian Institution was allotted $25,000 for the preparation, installation, and maintenance of an exhibition at the National Sesquicentennial Exposition in Philadelphia. As the exposition buildings were delayed in completion the Institution was not given possession of the space assigned to it until late in June, so that although part of our material was arranged by June 30 it was not possible to make complete installation of our cases until after the beginning of the present fiscal year. The section assigned to the Institution was one of the first in the Transportation Building to be arranged and made ready for display.

The exposition continued until November 30, 1926. During the entire period one or more members of the staff remained in attendance to answer the questions of visitors and to explain the various

objects displayed. The material exhibited was returned to Washington in December, all in good condition.

The exhibits attracted much attention and were favorably received by the public. A detailed account of the exhibits shown was included in the annual report of the Museum for 1926 and need not be repeated here.

SPECIAL EXHIBITION FOR THE SMITHSONIAN INSTITUTION

On February 11, 1927, there was called a conference of the establishment and Board of Regents of the Smithsonian Institution to which there were invited prominent Americans to advise with reference to the future policy and field of service of the Institution. As a background for this conference there was arranged in the main hall of the Smithsonian Building a special exhibition to demonstrate activities in research carried on at present under the Institution. The National Museum as one of the major organizations administered by the Smithsonian was prominently represented in so far as the departments of anthropology, biology, and geology were concerned.

For the occasion in question a series of temporary booths was arranged by means of screens about the entire main hall. Benches, tables, and cases were utilized for the exhibition of specimens and the walls were given over to charts, diagrams, and photographs. The entire installation was arranged not as a temporary transfer of cases and materials from the halls and storage collections of the National Museum, but as a demonstration of research activities on the part of the staff. Each object displayed, while chosen for its interest, was designed to represent some particular phase of science. The entire arrangement was designed to indicate a cross section of existing researches as developed in the Museum and the Institution in general.

The department of anthropology was represented by materials to show recent studies in the anthropology and archeology of the Columbia River Valley of Alaska, the lower Mississippi Valley, and the ancient Indian pueblos of the Southwest, supplemented by certain matters dealing with Old World archeology, with the evolution of man as a species in the animal kingdom, and with the development of the modern American since the invasion of the New World by the Caucasian race.

Projects illustrated in geology and paleontology included studies in elephants and dinosaurs as representatives of ancient vertebrate life, and illustrations of investigations into the thousands of fossil species known among the invertebrates, of the highest importance as indicators of the age of ancient rock strata with their included

oils and minerals. With these were examples of minerals taken from recent gifts and bequests in the Roebling and Canfield collections, together with materials to illustrate the formation of soil through the disintegration of granite and other rock.

The work comprised in the department of biology is so vast that attempt was made to cover only a few of its various branches. The section devoted to botany, important as the foundation of agriculture, was illustrated by the results of recent explorations on the plant life of tropical America and by demonstrations of systematic studies in various groups of plants. In zoology there were shown specimens of reptiles, paintings of fishes, of insects, birds, mollusks, mammals, foraminifera, crinoids or sea lilies, and other animals arranged to demonstrate various researches, some of purely scientific interest, others of known economic application.

With each section of the exhibits there were in attendance research workers of the scientific staff to explain fully to those interested the various questions involved. The exhibits proved so popular that they were thrown open to the public for several days during the week that followed.

EDUCATIONAL WORK

The educational work of the Museum consists in part of its exhibitions—objects so labeled that the public may be instructed as by an encyclopedia cut apart and spread out, except that its illustrations are real and material things. With advance in Museum methods, the objects on display are being grouped to a greater and greater extent to show relationships, with, whenever possible, some added indication of their source, so that at a glance the visitor may comprehend their true character and significance. Visitors to the exhibition halls of the National Museum reached a higher number during the present fiscal year than ever before in the history of the institution, a certain index to present-day interest in knowledge as included in the scope of the modern museum. As is usually true the greater number of visitors came during the warmer months, and as in other recent years the automobile was an important means of travel. The range of States represented by license plates on cars parked before the buildings included every section of the Union.

An incidental educational feature having for its purpose the promotion of scientific or technical teaching throughout the country has been the distribution to schools and colleges of duplicate material, properly identified and labeled, while through its publications and correspondence the National Museum has contact with a great group of persons many of whom never come to Washington.

Mr. A. H. Clark, who has continued the radio program of the Smithsonian Institution, reports that the talks are maintaining their

popularity and that many are preserved permanently in the form of printed articles. During the summer of 1926, as a result of the taking over of station WEAF in New York by the Radio Corporation of America and the discontinuance of station WCAP in Washington, the local radio situation became somewhat involved. From station WCAP station WRC acquired the scientific talks of the National Research Council and of Science Service, as well as the interesting talks on natural history subjects arranged by Percival S. Ridsdale. As station WRC was already running the regular Smithsonian series of talks and the nature talks from the National Zoological Park, some readjustment was necessary, as it was not practicable to give out so many more or less similar talks from a single station. The situation was still further complicated by the fact that WRC had now become the Washington outlet for station WEAF, as well as for station WJZ in New York. The closest cooperation has from the first existed between the managers of all of these series of scientific talks. In view of the fact that station WRC was having considerable difficulty in arranging its program, especially in satisfying the demands for time from the two stations in New York, the representatives of the Smithsonian Institution, the National Research Council, and Science Service asked the station to regard all of the scientific talks collectively as a single unit and to allot them such time as practicable which they would divide up between themselves. The National Research Council decided to discontinue its series, and after a few talks Mr. Ridsdale also discontinued his. Science Service shortly afterwards transferred its talks to station WMAL. This left the situation as heretofore, with the Smithsonian Institution the only organization giving scientific talks over WRC. Because of the demands on its time by outside stations, station WRC this year was unable to allot to the Smithsonian Institution more than a single period each week. The nature talks from the National Zoological Park, given on Saturdays last year, were therefore combined with the regular Smithsonian series, which was given on Wednesdays instead of on Thursdays as formerly. Twenty-nine talks were given during the season as follows:

Bringing home living animals from Africa. Dr. William M. Mann, Director, National Zoological Park, November 24, 1926.

Early American animals—elephants and others. Dr. J. W. Gidley, National Museum, December 1, 1926.

Shooting stars. Dr. Willard J. Fisher, Harvard College Observatory, December 8, 1926 (read by Austin H. Clark).

An observatory among the Hottentots. Dr. Charles G. Abbot, Assistant Secretary, Smithsonian Institution, December 22, 1926.

The invasion of the snowy owl. Dr. Alexander Wetmore, Assistant Secretary, Smithsonian Institution, December 22, 1926.

Natural history in Louisiana. Percy Viosca, jr., State biologist of Louisiana, January 5, 1927.

Dialogue between Miss Sarah W. Clark and Dr. William M. Mann on the subject of experiences in collecting living animals in Africa, January 19, 1927.

The Antarctic continent. Prof. Sir Douglas Mawson, The University, Adelaide, South Australia. January 26, 1927.

Some African reptiles. Miss Doris M. Cochran, National Museum, February 2, 1927.

White ants or termites. Dr. Thomas E. Snyder, Bureau of Entomology, February 9, 1927.

The romance of the lighthouse service. John S. Conway, Deputy Commissioner of Lighthouses, February 23, 1927.

Oyster farming. Herbert F. Prytherch, Bureau of Fisheries, March 2, 1927.

American wild horses. Dr. J. W. Gidley, National Museum, March 7, 1927.

Fishery products in the arts and industries. Lewis Radcliffe, Deputy Commissioner of Fisheries, March 16, 1927.

Beetles: what they are and what they do. Dr. Edward A. Chapin, Bureau of Entomology, March 21, 1927.

Watchmakers as inventors. Carl M. Mitman, National Museum, March 28, 1927.

The study of the sun. F. E. Fowle, Astrophysical Observatory, April 6, 1927.

The sea. Austin H. Clark, National Museum, April 13, 1927.

Frogs and toads. Miss Doris M. Cochran, National Museum, April 20, 1927.

The honey bee. James I. Hambleton, Bureau of Entomology, April 27, 1927.

Mice. Arthur J. Poole, National Museum, May 4, 1927.

Fossil footprints in the Grand Canyon. Charles W. Gilmore, National Museum, May 11, 1927.

Who owns Potomac Park? Dr. George P. Merrill, National Museum, May 18, 1927.

Museums. Chauncey J. Hamlin, president, American Association of Museums, May 25, 1927.

The Black Hills of South Dakota. Dr. James W. Gidley, National Museum, June 1, 1927.

Goldfish and other aquarium creatures. Glenn C. Leach, Bureau of Fisheries, June 8, 1927.

Snakes. Charles S. East, National Museum, June 15, 1927.

The Gold Coast, West Africa. Charles H. Knowles, Director of Agriculture. Accra, Gold Coast, June 22, 1927.

The coins of Asia. T. T. Belote, National Museum, June 29, 1927.

The National Museum has no funds that may be devoted to lecture courses and conducts no definite activities of that kind, except as members of the staff may present talks before various organizations and meetings. A brief review of work of this sort during the past year is presented together with an account of educational activities through loans of specimens and other means.

The Florida State College for Women, of Tallahassee, Fla., utilized a special collection of ceremonial objects of carved wood, sent it as a loan, in classes in anthropology and sociology, as exhibits in their art department, and in the School of Home Economics, and finally to illustrate a number of talks at different high schools.

Dr. Walter Hough gave a talk on Americana to a group of the Archaeological League, and on American aboriginal art before the art section of the Twentieth Century Club. He talked on Egypt before the Carnegie Library Association. Groups of the Wilson Teachers Normal School were given explanations of the collections in anthropology by members of the staff. Three hundred members of the National Farm Boys and Girls 4-H Club, brought to Washington by the Department of Agriculture, were shown the ethnological collection by the head curator of the department.

During the fiscal year just ended the curator of American archeology has lectured, chiefly on various phases of the Pueblo Bonito expeditions, before the Southwest Museum, Los Angeles, Calif.; the Arizona Archaeological Society, Tucson; the El Paso Archaeological Society, El Paso, Tex.; the Texas Technological College, at Lubbock; the annual meeting of the American Anthropological Society and section H, American Association for the Advancement of Science, at Philadelphia; and, in Washington, before members of the Washington Society of Engineers; Lebanon Chapter, Order of the Eastern Star; the Men's Club of Foundry Methodist Church; the Cosmos Club; and the National Academy of Sciences at its 1927 annual meeting.

Doctor Casanowicz guided a high-school group from Virginia through the classical exhibits, and also explained the Assyro-Babylonian antiquities to a group from the Oyster School of Washington.

Talks were given by Doctor Hrdlicka, curator of physical anthropology at the Museum to students of divinity from Catholic University, Professor Duncan's class of the American University, and the graduating class of St. John's College, Annapolis, Md. He gave lectures outside to the Club of University Women, the Washington City Club, the City Club, the Men's Club of Mount Pleasant Congregational Church, and before the Anthropological Society of Washington, and a presidential address at the meeting of the American Anthropological Association, Philadelphia. In addition, a number of lectures, where expenses were paid, were given at several institutions outside of Washington, before the Teachers' Institute, Springfield, Ill.; the board of directors, Bell Telephone System Co., Philadelphia; at Wells College, before the Dental Society, Philadelphia.

Miss Doris M. Cochran, assistant curator of reptiles, rendered assistance to the nature study teachers of the public schools of the city, by giving several half-hour talks on the commoner North American reptiles and amphibians. She also addressed the students of the Howard University medical school on the subject of poisonous reptiles with exhibition of specimens and a visit to the reptile hall. Dr. J. M. Aldrich, associate curator of insects, gave two lectures on

Diptera affecting man before the junior medical students of Howard University, and an exhibit of several species of Diptera injurious to man was prepared for use by the officials of the Bureau of Entomology at the meeting of the American Medical Association. Dr. Paul Bartsch, as head professor of zoology at George Washington University, and professor of parasitology at the medical school of Howard University, frequently brought classes to the Museum for examination of exhibits. He also gave a number of popular lectures before various organizations on natural-history subjects. Thus, he gave a talk on "The wonders of the deep" as the first of a series in the 10-event course at the Georgetown Presbyterian Church; to troop 33 of the Boy Scouts at Takoma Park on "Birds about home," and another on the same topic to the Citizens' Association of Chevy Chase. An illustrated lecture, "An hour with our birds," was given to the Washington Club. The Parent-Teachers' Association at the New Brightwood School was addressed on problems connected with the retarded child in the light of modern medical investigation. The Dunbar High School students were given an address on chalk, chalk animals and their relatives, and the Vivarium Society at the National Zoological Park was given a talk on mollusks, their habits and method of culture.

Austin H. Clark, curator of echinoderms, gave three lectures on "Life in the sea" before the annual symposium arranged by the Buffalo Society of Natural Sciences, the University of Buffalo, and Canisius College on April 20–22, at Buffalo, N. Y. During the meeting of the American Association of Museums held in Washington he conducted the symposium on science museums, which was held at the Willard Hotel on the evening of May 24, 1927. In his capacity of news manager (originally director of publicity) for the American Association for the Advancement of Science, Mr. Clark attended the meetings of the association held in Philadelphia from December 27, 1926, to January 1, 1927. A detailed account of the news service at this meeting has been published in Science.

Educational work by members of the staff of the division of plants has consisted mainly of assistance rendered in connection with the identification of material for such organizations as the American Nature Association, and in suggesting methods of work and titles of helpful literature, much of this help, though official, having been extended informally. Dr. J. N. Rose delivered an illustrated lecture on cacti before the Botanical Society of America at the midwinter meeting, and Professor Hitchcock and Mrs. Agnes Chase presented more technical papers on taxonomy at the same time.

Dr. G. P. Merrill, head curator of the department of geology, delivered two papers at the meetings of the American Association

for the Advancement of Science at Philadelphia—one before the History of Science Society entitled "Geologists and geology of colonial Philadelphia"; and the other before the section of chemistry on "The present condition of knowledge on the composition of meteorites." He also prepared and delivered a brief radio talk entitled "Who owns Potomac Park?"

Dr. W. F. Foshag acted as associate editor of the American Mineralogist and as councilor of the Mineralogical Society of America. Upon the invitation of the Philadelphia Mineralogical Society he delivered an informal talk on his trip into northern Mexico.

Mr. C. W. Gilmore delivered a lecture on "Extinct monsters" to a rally of the fourth division of Washington Boy Scouts, and later the same was repeated to the Men's Club of Foundry Methodist Episcopal Church. About 700 persons were present at the two lectures. On several occasions he has given brief explanatory talks to classes from various schools of Washington and vicinity. Doctor Gidley delivered informative talks before various clubs in Washington, and to a class of high-school students at Zolfo Springs, Fla. and both Mr. Gilmore and Doctor Gidley have prepared and broadcast radio talks in the Smithsonian course, the former delivering one and the latter three.

Doctors Bassler and Resser gave lectures and informal talks to classes in natural science of the Washington high schools and visiting schools, as well as to young people brought here by other departments of the Government. The 4-H Club of the Department of Agriculture, numbering several hundred, received instruction in the work of the paleontologist from Doctor Bassler. Various universities also have brought their advanced classes in geology to Washington and to these Doctor Bassler has explained the Museum's activities as well as the local geology. Doctor Bassler continues to serve as examiner in geological subjects for the Girl Scouts, while Doctor Resser has had occasion to lecture on the work of the Institution at local churches and near-by colleges. Both presented papers before scientific organizations, and Doctor Bassler completed his seventeenth year as secretary of the Paleontological Society of America. He has also served as director of one of the major projects of the National Research Council in cooperation with the American Petroleum Institute.

The divisions of mineral and mechanical technology rendered their usual assistance to local schools by lectures on mineral technology by Carl W. Mitman and F. A. Taylor and on mechanical technology by Paul E. Garber. Probably the largest individual group to whom the collections were explained was the 4-H Club of boy and girl farmers who were entertained by the Department of Agriculture for a week in June, 1927. Mr. Taylor gave a talk on the activities of the

Smithsonian and its branches before the student branch of the American Society of Mechanical Engineers at its spring meeting at George Washington University.

In the division of textiles informal talks were given in the halls by F. L. Lewton to classes from the Washington Missionary College, Takoma Park, Md., and to the class in costume design from George Washington University, and by Mrs. E. W. Rosson to classes from Wilson Normal School of Washington.

For several years past employees of Woodward & Lothrop's department store, Washington, D. C., enrolled in its training department, have come to the Museum in groups for talks on textiles by Mr. Lewton. This year a change was made whereby the lectures were given at the store to a much larger group, permitting a more formal presentation and covering a wider field. Thus, on February 7, 9, and 10, 1927, Mr. Lewton gave lectures to three groups of store employees on the technology of yarn and cloth construction, in which the effect on the finished goods of the different physical properties of the five principal fibers was emphasized. He was also the speaker for industrial arts evening at the Arts Club of Washington, on February 10, when he gave an informal talk on the technology of fabric decoration, illustrated by specimens of fabrics showing special types of decoration such as weft and warp printing, and cross-dyeing effects. The same speaker, on January 11, 1927, addressed the Washington Chapter of the American Home Economics Association, at the Bureau of Home Economics, on "Rayon—Its future and possibilities." On January 19 he spoke to the Science Club of Eastern High School, Washington, D. C., on "Rayon—Its manufacture and application"; on March 8, to the Mothers' Club of Takoma Park, Md., on "A comparison of the qualities of dress fabrics 20 years ago and to-day"; and on March 11, 1927, to the home economics department of George Washington University, on "The manufacture and future of rayon."

Students from the Wilson Normal School of this city were addressed in the Museum by William N. Watkins on the subject of "Turpentining," and he likewise conducted the graduating class from the Hallstead (Pa.) High School through the wood court speaking on the collection generally.

Dr. George B. Roth, professor of pharmacology at George Washington University, continued to visit the Museum with medical students for the purpose of acquainting them with the classification of medicinal materials and the physical characteristics of the crude drugs from which medicines are made.

The District of Columbia Parent-Teacher Congress made special arrangements to have the health exhibits explained to its members. The first delegation consisted of about 50 members, and throughout

the year other delegations of varying numbers called for the same purpose. The American Optometric Association during its annual convention in Washington included in its program a visit to the Museum for the express purpose of studying the exhibits of the hall of health. Several hundred delegates from all parts of the United States were included in the group.

In connection with American forest week activities, the section of wood technology installed exhibits during the period that covered tree planting, timber growing, forest protection, recreation, and utilization. During American forest week 18,739 persons visited the building, and up to closing time on May 18, when some of the exhibits were removed, 48,163 visitors had been recorded.

R. P. Tolman, assistant curator of the division of graphic arts, gave one talk before the convention of American Pen Women. At the present time this division has six traveling exhibits of graphic arts which show how prints are made, and two traveling exhibits on the history of photography. These were shown 47 times in public schools, colleges, libraries, and other establishments from Massachusetts to California. These exhibits are available for display by any organization that is interested, the only expense being the expressage. The two larger exhibits are engaged for nearly the entire next season, and a number of engagements have been arranged for the smaller ones.

VISITORS

The Museum buildings are open to the public free of charge every week day from 9 a. m. to 4.30 p. m. and, in addition, the Natural History Building and the Arts and Industries Building are open on Sunday afternoon from 1.30 to 4.30. This year all exhibition halls were closed on Christmas Day and New Year's Day, following the precedent of 1926, and the Smithsonian Building was closed to the public for two days, February 10 and 11, 1927, when the Institution was using the public halls for a conference. In connection with the Nation's welcome to Col. Charles A. Lindbergh on June 11, all exhibition halls were closed at noon.

The flags on all Museum buildings were placed at half mast at 12.50 p. m., February 9, 1927, when notice was received of the death of Secretary Walcott, and were so continued through February 12, the day of the funeral. The offices in all Museum buildings were closed all day February 12 and the exhibition halls were closed to the public after 2 p. m.

The visitors to the Museum for the year aggregated 1,153,212 persons, an increase of nearly 50,000 over the previous year. Average attendance for week days was 3,263 and for Sundays, with only two buildings open, 2,660. The number of visitors to the Smith-

sonian Building during the year was 128,868 and to the Aircraft Building 82,628, a daily average of 414 for the former and 265 for the latter; to the Arts and Industries Building, 338,566 on week days and 41,864 on Sundays, a daily week-day average of 1,088 and a Sunday average of 805; and to the Natural History Building, 464,800 on week days and 96,486 on Sundays, a daily week-day average of 1,494 and a Sunday average of 1,855.

The following tables show, respectively, the attendance of visitors during each month of the last year and for each year since 1881, when the building now devoted to arts and industries was first opened to the public:

Number of visitors during the year ended June 30, 1927

Year and month	Smithsonian Building	Museum buildings			Total
		Arts and Industries	Natural History	Aircraft	
1926					
July	17,356	41,022	69,724	21,515	149,617
August	22,080	59,330	74,729	9,965	166,104
September	14,990	43,334	59,094	7,592	125,010
October	8,971	30,563	41,814	4,382	85,730
November	5,647	17,917	28,389	3,144	55,097
December	4,049	11,394	18,917	2,473	36,833
1927					
January	3,643	13,193	22,827	2,092	41,755
February	3,856	13,230	27,665	2,054	46,805
March	5,373	19,573	34,714	3,220	62,880
April	15,457	47,018	65,719	7,185	135,379
May	10,973	38,867	55,999	7,470	113,309
June	16,473	44,989	61,695	11,536	134,693
Total	128,868	380,430	561,286	82,628	1,153,212

Number of visitors to the Smithsonian and Museum Buildings since 1881

Year	Smithsonian Building	Museum buildings			Total
		Arts and Industries	Natural History	Aircraft	
1881	100,000	150,000			250,000
1882	152,744	167,455			320,199
1883	104,823	202,188			307,011
1884 (half year)	45,565	97,661			143,226
1884–85 (fiscal year)	105,993	205,026			311,019
1885–86	88,960	174,225			263,185
1886–87	98,552	216,562			315,114
1887–88	102,863	249,665			352,528
1888–89	149,618	374,843			524,461
1889–90	120,894	274,324			395,218
1890–91	111,669	286,426			398,095
1891–92	114,817	269,825			384,642
1892–93	174,188	319,930			494,118

Number of visitors to the Smithsonian Museum Building since 1881—Continued

Year	Smithsonian Building	Museum buildings			Total
		Arts and Industries	Natural History	Aircraft	
1893–94	103, 910	195, 748	----------	----------	299, 658
1894–95	105, 658	201, 744	----------	----------	307, 402
1895–96	103, 650	180, 505	----------	----------	284, 155
1896–97	115, 709	229, 606	----------	----------	345, 315
1897–98	99, 273	177, 254	----------	----------	276, 527
1898–99	116, 912	192, 471	----------	----------	309, 383
1899–1900	133, 147	225, 440	----------	----------	358, 587
1900–1901	151, 563	216, 556	----------	----------	368, 119
1901–2	144, 107	173, 888	----------	----------	317, 995
1902–3	181, 174	315, 307	----------	----------	496, 481
1903–4	143, 988	220, 778	----------	----------	364, 766
1904–5	149, 380	235, 921	----------	----------	385, 301
1905–6	149, 661	210, 886	----------	----------	360, 547
1906–7	153, 591	210, 017	----------	----------	363, 698
1907–8	237, 182	299, 659	----------	----------	536, 841
1908–9	198, 054	245, 187	----------	----------	443, 241
1909–10	179, 163	228, 804	50, 403	----------	458, 370
1910–11	167, 085	207, 010	151, 112	----------	525, 207
1911–12	143, 134	172, 182	281, 887	----------	597, 203
1912–13	142, 420	173, 858	319, 806	----------	636, 084
1913–14	102, 645	146, 533	329, 381	----------	578, 559
1914–15	40, 324	133, 202	321, 712	----------	495, 238
1915–16	48, 517	146, 956	381, 228	----------	576, 701
1916–17	86, 335	161, 700	407, 025	----------	655, 060
1917–18	67, 224	161, 298	401, 100	----------	629, 622
1918–19	101, 504	266, 532	[1] 132, 859	----------	500, 895
1919–20	86, 013	250, 982	422, 984	----------	759, 979
1920–21	90, 235	286, 397	467, 299	31, 235	875, 166
1921–22	83, 384	262, 151	441, 604	46, 380	833, 519
1922–23	95, 168	259, 542	508, 518	42, 904	906, 132
1923–24	104, 601	290, 012	540, 776	43, 534	978, 923
1924–25	107, 342	304, 858	557, 016	52, 787	1, 022, 003
1925–26	110, 975	355, 762	581, 563	58, 005	1, 106, 305
1926–27	128, 868	380, 430	561, 286	82, 628	1, 153, 212
Grand total	5, 702, 582	10,707,396	6, 857, 559	357, 473	23, 565, 010

[1] Building open for only 3 months of the year.

PUBLICATIONS

The publications issued during the year include 10 volumes, namely, the annual report for 1926; Bulletin 134, Material Culture of the People of Southeastern Panama, Based on Specimens in the United States National Museum, by Herbert W. Krieger; Bulletin 135, Life Histories of North American Marsh Birds, Orders Odontoglossae, Herodiones, and Paludicolae, by Arthur Cleveland Bent; Bulletin 136, Handbook of the Collection of Musical Instruments in the United States National Museum, by Frances Densmore; Bulletin 137, The Collection of Primitive Weapons and Armor of the Philippine Islands in the United States National Museum, by Herbert W. Krieger; Bulletin 138, The Fossil Stalk-eyed Crustacea of the Pacific Slope of North America, by Mary J. Rathbun; Bulletin 139, Fire as an

Agent in Human Culture, by Walter Hough; Bulletin 140, Bird Parasites of the Nematode Suborders Strongylata, Ascaridata, and Spirurata, by Eloise B. Cram, and a very small edition, for office use, of the complete volume 67 of the Proceedings and the complete volume 23, Contributions from the United States National Herbarium. Sixty-three separate papers published include three papers in the Bulletin series, 5 in the Contributions from the United States National Herbarium, and 55 in the Proceedings. A third and revised edition of the Illustrated Handbook of the Department of Geology of the United States National Museum was printed.

The complete distribution of the volumes and separates to libraries and individuals on the regular mailing lists aggregated 101,598 copies, while in addition 8,982 copies of publications issued during this and previous years were supplied in response to special requests. The mailing lists have been carefully revised to avoid loss in distribution so far as practicable.

The editorial office, besides supervising the printing of the publications, has charge also of all miscellaneous printing and binding for the Museum, in which connection 711,119 forms, labels, and other items were printed and 2,202 volumes were bound.

LIBRARY

The library of the National Museum, in common with the other divisions of the Smithsonian library, owes its growth largely to the exchange of publications between the Institution and its branches and other learned institutions and societies throughout the world. These publications come to the library direct, or through the International Exchange Service, which is administered by the Institution. During the last fiscal year 31,647 packages of one or more publications each came by mail and 7,459 through the exchange. This was an increase of more than 1,200 packages over the year before, and testified to the generous response made to the letters prepared by the library asking for numbers missing from its sets, or proposing or accepting exchange relations with new societies. After the 39,106 packages had been opened, the items were stamped, entered, and sent to the appropriate divisions of the library, but chiefly to the Smithsonian deposit in the Library of Congress and the library of the National Museum.

During the year 2,492 volumes and 1,299 pamphlets were added to the Museum library, representing an increase in accessions of more than 20 per cent over the year before, and giving the library a total of 69,300 volumes and 105,716 pamphlets. Most of the accessions came, as has been said, by exchange; others came by gift, especially from the Library of Congress, which was generous enough to send from its collection of duplicates 512 volumes and 1,926 parts of vol-

umes needed by the library. Other important gifts were made by the late Secretary Walcott, Dr. W. H. Holmes, and Dr. C. W. Richmond. Among the 71 volumes and 73 pamphlets given by Doctor Holmes was a manuscript volume of letters that scores of his friends in America and abroad had written to him on his eightieth birthday. This volume, together with several others of personal interest given by Doctor Holmes, was assigned to the library of the National Gallery of Art. Some of the other donors were Assistant Secretary Wetmore, Dr. J. M. Aldrich, A. H. Clark, the late Dr. W. H. Dall, Dr. O. P. Hay, Dr. Walter Hough, Dr. Aleš Hrdlička, N. M. Judd, Dr. W. R. Maxon, Dr. G. P. Merrill, G. S. Miller, A. J. Olmsted, J. U. Perkins, Miss M. J. Rathbun, and J. H. Riley.

In the course of the year 12,274 parts of periodicals were entered, 710 volumes and 948 pamphlets were catalogued, and 4,818 cards were added to the shelf list. One of the most important pieces of work was the preparation of nearly 2,000 volumes for binding, of which 1,439 were sent to the binder, and 1,183 on their return checked, accessioned, and shelved. The loans to members of the scientific staff totaled 4,316, of which 1,721 were borrowed from the Library of Congress and 137 elsewhere. The other loans numbered 198, made chiefly to Government libraries and libraries outside of Washington. Loans of especial interest, as the items were rare in this country, were made to the California Academy of Sciences, the University of Wisconsin, and Johns Hopkins University. To the last were sent 104 titles in paleobotany. Thousands of publications were consulted in the reference room, both by members of the staff and by other research workers, including a number from foreign countries.

In addition to the regular work of the year, several important special tasks were undertaken. The intensive effort to complete broken sets of periodicals, begun last year, was continued with excellent results. A beginning was also made toward cataloguing some of the special collections in the sectional libraries. Among the others were the filing of 30,866 cards in the methodical and alphabetic sets of the Concilium Bibliographicum, which was almost twice the number filed the year before; the final checking of the holdings of the library for the forthcoming Union List of Serials; and the preparation, in connection with the other divisions of the Smithsonian library, of an exhibit of books for the conference on the future held at the Institution last February.

The number of sectional libraries in the Museum is now 37. These represent important working units of the main library. They are as follows:

Administration.
Administrative assistant's office.
American archeology.
Anthropology.
Biology.
Birds.

Botany.
Echinoderms.
Editor's office.
Ethnology.
Fishes.
Foods.
Geology.
Graphic arts.
History.
Insects.
Invertebrate paleontology.
Mammals.
Marine invertebrates.
Mechanical technology.
Medicine.
Minerals.
Mineral technology.
Mollusks.
National Gallery of Art.
Old World archeology.
Organic chemistry.
Paleobotany.
Photography.
Physical anthropology.
Property clerk's office.
Reptiles and batrachians.
Superintendent's office.
Taxidermy.
Textiles.
Vertebrate paleontology.
Wood technology.

The technological library, which is located in the Old Museum Building, concerns itself chiefly with the useful arts and industries. During the past year the work of reorganization that was begun two years before was continued, but, owing to the increasing difficulty of the task and the lack of help, was not completed. The shelf list was finished, however, by the addition of 2,500 cards, and an excellent beginning made on the inventory. Many duplicates were removed to the west stacks of the Smithsonian Building, together with a large number of Government publications and publications of various States not needed in the Library. These will be disposed of later. Their removal from the old museum building has materially increased the space available for collections necessary to the work of the curators. The loans numbered 450.

The library of the National Gallery of Art, which is at present administered as a sectional library of the National Museum, is in reality one of the ten divisions of the Smithsonian library, and as such is entitled to a place by itself in the annual report of the Librarian. This library increased during the year by 123 volumes, 788 parts of volumes, and 120 pamphlets. It now totals 704 volumes and 785 pamphlets. The most important gift of the year was made by Dr. William H. Holmes, director of the gallery. It has already been spoken of among the accessions to the library of the National Museum.

On the whole, the year was one of progress toward solving the problems which have arisen in connection with the work of reorganizing the Museum library that was begun three years ago. But the progress would have been far greater if funds had been at hand for buying books and periodicals needed by the curators, for supplying in the standard sets the missing numbers that can not be obtained by exchange, and for employing enough trained workers to make avail-

able at the earliest possible moment the thousands of volumes and pamphlets now lying useless on the shelves. For these purposes the library is in serious need of funds.

PHOTOGRAPHIC LABORATORY

The photographic laboratory of the Museum, with but three employees, reports as the work of the year the making of 1,577 negatives, 11,971 prints, 310 lantern slides, 71 enlargements, and 2 transparencies; the development of 120 field negatives, 53 rolls, and 22 film packs; the mounting of 831 prints and 32 prints bleached for drawing. These were required for illustrations in publications or for record purposes in the National Museum and the National Gallery of Art. The Museum through a cooperative arrangement serves the Gallery along these lines.

BUILDINGS AND EQUIPMENT

Building repairs and alterations.—In the Natural History Building the most important work accomplished was the repainting of the exterior surfaces of all metal window sashes on the first and second floors; the remodeling of the public comfort room for men on the ground floor; and the painting of concrete floors in corridors and at the west entrance, ground floor. The walls and ceiling of the bird storage room on the third floor were painted white, greatly improving the lighting and facilitating work in all parts of the space. Minor repairs were made to the wall of the east freight elevator shaft and to walls and ceilings in various offices on the ground and third floors.

In the Arts and Industries Building the worn-out copper downspouts leading from the upper to the lower roofs were replaced by galvanized-iron spouts. The tin roofs over the four courts, the north and the west halls, sections of the rotunda, and over the restaurant were given a coat of metallic paint. New wire screens were installed in windows of the exhibition halls, and new awnings were provided for the skylight over the restaurant. In the interior, portions of the walls in several exhibition halls were pointed up and painted, and the wooden floor in a small storage room was renewed.

In connection with the Smithsonian Building the most important work was the repairing and painting of the exterior of all window sashes and doors; the completion of the remodeling of the disbursing offices, begun in 1926, to provide greater protection on pay day; the painting of the public comfort room for men; and the attaching of safety treads on the oak steps leading from the first floor to the basement of the north tower.

The roof and the exterior of two sides of the metal Aircraft Building were painted, and the other two sides were touched up where necessary.

Heat, light, and power plant.—The power plant, which was closed down for the summer, as customary, was put in operation on September 20, 1926, and continued until May 28, 1927.

The plant has been in operation nearly 18 years, during which time a number of major repairs have been made to the main generating unit, which consists of three 250 and one 125 horsepower engines. The new steam valves installed on the large units in 1926 have increased somewhat their efficiency and have made it possible to carry somewhat heavier loads than heretofore. New pistons, complete with rings, rods, and packing, have now been installed on these units, which will add to their smooth and continuous operation. The Taylor mechanical stokers have required somewhat less attention than previously, due partly to the installation of new gear cases on two of the boilers.

The boilers were given annual inspection, as usual, by the Steamboat Inspection Service and reported in good condition. The new feed water connections requested by the inspector the preceding year were changed to meet his approval.

In the operation of the plant, 3,829 tons of bituminous coal were used during the year, which is slightly less than consumed in 1926. The cost of coal averaged $5.78 a ton, which exceeds that of the previous year, when the cost was only $5.57 a ton.

Electric current generated during the year totaled 586,041 kilowatt hours, at a cost of 1.97 cents for the kilowatt hour if interest on plant and depreciation are included, or 1.68 cents for the kilowatt hour if not included. It should be noted that the current produced approaches 600,000 kilowatt hours which, for the time the plant is in operation, is about all that can be produced. During the summer when the plant is not in operation, current for power and light is purchased from a commercial concern under contract made by the Treasury Department.

The ice plant in operation for 3,413 hours produced 368 tons of ice, which was sufficient to meet the needs of all the buildings of the Institution in the Smithsonian Park. The cost of ice, including labor and supplies, replacement of cans, new drive chain, and the depreciation on the ammonia compressor purchased during the year 1926, was $2.49 a ton. Thus the Museum manufactured ice at 50 per cent less than the contract price on the general supply schedule, the amount saved for the year being approximately $1,000.

The labor turnover in connection with the heating, lighting, and power plant has been greater than ever before. Even during the World War, when labor was scarce, there was no such considerable

turnover in the boiler-room force as has been the case this year. Until the salary rates for firemen and many of the other employees, as well as for skilled mechanics, can be substantially increased, work will continue to be greatly handicapped.

The plant in the Natural History Building, when installed about 1910, was designed to care for the Smithsonian Building, the Natural History Building, and the Arts and Industries Building. Since then the heating and lighting and ventilating of the Freer Gallery of Art and of the Aircraft Building have been added. This has necessitated supplementing the main plant by using the old boilers in the Arts and Industries Building during the severest winter weather. The plant has always been operated with an absolute minumum of employees, and as a matter of economy the Museum has relied upon obtaining temporary help for about four months each year to run this additional unit. Experience has shown, however, that it is impossible to secure suitable temporary employees because of the low salary grades maintaining at the Museum and since all appointees must enter the service at the minimum of the grade. Temporary employees are not granted sick or annual leave, which further detracts from the service. Under these conditions it is absolutely necessary for the Museum to have an additional permanent engineer, a fireman, and an elevator conductor, in order that the plant may be efficiently operated.

Furniture and fixtures.—The furniture added during the year included 13 exhibition cases and bases; 253 pieces of storage, laboratory, and office furniture; and 1,572 drawers of various kinds. During the same period 12 exhibition cases and bases, 7 pieces of storage, laboratory, and office furniture, and 180 wing frames were condemned as unfit for further use. An inventory of furniture on hand June 30, 1927, shows 3,715 exhibition cases and bases; 12,364 pieces of storage, laboratory and office furniture; 51,235 wooden unit drawers; 4,712 metal unit drawers; 14,544 insect drawers; 18,933 special drawers; 1,185 wooden boxes; and 533 wing frames.

MEETINGS AND RECEPTIONS

The United States National Museum, with its fully equipped auditorium and lecture room, is precluded by its limited maintenance funds from initiating courses of lectures in its own behalf. It freely offers its meeting facilities, however, to other organizations of kindred purposes for their regular and special gatherings and assists so far as possible in carrying out their programs. The auditorium and lecture room were utilized on 114 such occasions during the year. The contacts made and the variety of interests served will be seen from the following list of organizations using these facilities, and the names of speakers and titles of lectures delivered.

1926

July 16, 8 p. m. (room 43): Vivarium Society. Regular meeting.

July 31, 2 p. m. (room 43): Southwestern College, Winfield, Kans. Meeting of special class under supervision of William M. Goldsmith.

August 11, 7 p. m. (auditorium): National Association of the Deaf. Exhibition of motion pictures of the World War and two reels in deaf and dumb language.

August 20, 8 p. m. (room 43): Vivarium Society. Regular meeting.

August 24, 8.30 p. m. (auditorium): The Mississippi Society of Washington. Addresses by Hon. Dennis Murphy, lieutenant governor of Mississippi, and others. Exhibition of motion pictures and concert by quartet.

September 14, 8.30 p. m. (auditorium): International Union of Pure and Applied Chemistry. Seventh International Conference. Illustrated address by M. le Prince Ginori Conti, president of the Italian Society of General and Applied Chemistry, Florence, Italy, on "The utilization of geothermal power in Tuscany."

September 17, 8 p. m. (room 43): Vivarium Society. Regular meeting.

September 25, 9.30 a. m. (room 43): Federal Horticultural Board, United States Department of Agriculture. Hearing to consider the advisability of extending the Japanese beetle quarantine to include the States of New York and Connecticut.

October 6, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Talk by Shirley W. Allen on "Western forests."

October 6, 8 p. m. (room 43): Bureau of Plant Industry, United States Department of Agriculture. Illustrated lecture by Dr. E. van Slogteren of the Laboratorium voor Bloembollen Ondersoek, Lisse, Netherlands, on "Bulbs and insects in Holland."

October 7, 8 p. m. (room 43): The Entomological Society of Washington. Addresses by Dr. J. M. Aldrich on "Collecting diptera in Guatemala," and by C. T. Greene on "Hunting fruit flies in Panama."

October 11, 4.45 p. m. (room 43): Anthropological Society of Washington. Address by Dr. Aleš Hrdlička: "Explorations in Alaska and Northeast Asia."

October 12, 4.30 p. m. (room 43): Society for Philosophical Inquiry.

October 12, 8 p. m. (room 43): American Horticultural Society. Illustrated lecture by Maj. U. S. Grant on "Development of Washington, D. C., and its parks."

October 15, 8 p. m. (room 43): Vivarium Society. Regular meeting.

October 30, 11 a. m. (room 43): Girl Scouts. Address by Dr. Paul Bartsch.

November 4, 8 p. m. (room 43): The Entomological Society of Washington. Illustrated lecture by H. E. Ewing on "Recent developments of chiggers and their control."

November 9, 4.45 p. m. (room 43): Society for Philosophical Inquiry.

November 9, 8 p. m. (room 43): American Horticultural Society. Address by C. A. Reed on "Growing nuts in America and China."

November 16, 4.45 p. m. (room 43): Anthropological Society of Washington. Illustrated lecture by Dr. J. W. Fewkes, "An account of field work."

November 27, 5 p. m. (room 43): Vivarium Society. Regular meeting.

December 1, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture.

December 2, 8 p. m. (room 43): The Entomological Society of Washington. Business meeting, with election of officers. Addresses by E. A. Richmond on "Olfactory response of the Japanese beetle;" by S. E. Crumb on "General observations on chemotropism in insects," and by Peres Simmons on "The ability of the larvae of the cheese skipper to endure unfavorable conditions."

December 3, 4, 6, 10, 11, and 13, 10 a. m. (room 43): Aeronautical Society. Address by Dr. Theodore von Karman.

December 14, 4.30 p. m. (room 43): Society for Philosophical Inquiry.

December 14, 8 p. m. (room 43): American Horticultural Society. Illustrated lecture by Professor Zimmerman of the Maryland Agricultural College on "Propagating plants."

December 14, 8 p. m. (auditorium): American Institute of Electrical Engineers and American Society of Mechanical Engineers. Joint meeting, with address by W. C. L. Eglin, vice president and general manager of the Philadelphia Electrical Co., on "Conowingo hydroelectric development."

December 16, 8 p. m. (room 43): Smithsonian staff. Illustrated lecture by H. D. Skinner, of Otago University, Dunedin, New Zealand, on "Anthropology."

December 17, 8 p. m. (room 43): Vivarium Society. Regular meeting.

December 21, 4.45 p. m. (room 43): Anthropological Society of Washington.

1927

January 6, 8 p. m. (room 43): The Entomological Society of Washington. Addresses by Dr. J. M. Aldrich, retiring president, and by Dr. L. O. Howard on "J. H. Patton and his work."

January 10, 2 p. m. (room 43): Art section of the Twentieth Century Club. Address on "Art," by Dr. Walter Hough, introduced by Dr. Alexander Wetmore.

January 11, 4.30 p. m. (room 43): Society for Philosophical Inquiry.

January 11, 8 p. m. (room 43): American Horticultural Society. Illustrated address by Dr. F. V. Coville on "The cultivation of ericaceous plants."

January 12, 8.15 p. m. (room 43): The Wild Flower Preservation Society. Annual meeting and election of officers. Reports on summer trips by members.

January 18, 4.30 p. m. (room 43): Anthropological Society of Washington. Annual meeting, with address by Warren K. Moorhead on "The prehistoric mound builders."

January 20, 10 a. m. (auditorium): Biological Survey, United States Department of Agriculture. Conference to consider revising rules and regulations for protection of game.

January 21, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Address by A. G. Hamel on "Forestry."

January 21, 4.30 p. m. (auditorium): Vivarium Society. Address by Dr. William Mann, director of the National Zoological Park, on "The Smithsonian-Chrysler African expedition," illustrated with motion pictures.

January 28, 8 p. m. (auditorium): Spanish-American War Veterans. Reception in honor of the ambassador from Cuba, Señor Dr. Orestes Ferrara, and Senator R. W. Means, of Colorado, on the anniversary of the birth of José Martí, the Cuban patriot. Addresses were made by the ambassador and the Senator. Motion pictures were shown and music rendered by the Army band.

February 2, 8 p. m. (room 43): The Wild Flower Preservation Society. Illustrated lecture by Dr. Edgar T. Wherry on "The selection of a national flower."

February 3, 4.45 p. m. (room 43): Anthropological Society of Washington. Address by Mrs. Zelia Nuttall on "New light on ancient calendars."

February 3, 8 p. m. (room 43): The Entomological Society of Washington. Address by A. L. Quaintance: "Synopsis on arsenical residues."

February 5, 8 p. m. (auditorium): Audubon Society of the District of Columbia. Business meeting, with election of officers. Illustrated lecture by Alden H. Hadley, on "Birds and conservation."

February 8, 4.30 p. m. (room 43): Society for Philosophical Inquiry.

February 8, 8 p. m. (room 43): American Horticultural Society. Business meeting.

February 10, 8 p. m. (auditorium): American War Mothers. A patriotic gathering, with vocal and instrumental music and addresses.

February 15, 8 p. m. (auditorium): National Aeronautic Association. Illustrated address by Maj. L. D. Gardner on "Twenty-one thousand miles over the airways of Europe."

February 22, 10 a. m. (auditorium): Masonic Club of the District of Columbia. Celebration of Washington's birthday. Address by Hon. A. M. Free, member of Congress from California, on "The life of George Washington and Masonry."

February 23, 8 p. m. (room 43): The Wild Flower preservation Society. Illustrated address by Dr. Edgar T. Wherry on "Rediscovering lost wild flowers."

February 26, 1 p. m. (room 43): Howard University Medical School. Address by Dr. H. E. Ewing on "Ticks."

March 3, 8 p. m. (room 43): The Entomological Society of Washington. Illustrated address by C. A. Weigel on "Hot water bulb sterilizer," and W. H. White on "The pea aphis problem."

March 8, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Illustrated address by Dr. Raphael Zon on "What is a forest"?

March 8, 3.30 p. m. (room 43): Howard University Medical School. Address by Dr. Harrison G. Dyar on "Mosquitoes."

March 8, 4.30 p. m. (room 43): Society for Philosophical Inquiry."

March 8, 8 p. m. (room 43): American Horticultural Society. Illustrated lecture by Edwin C. Powell on "Grapes for the home garden."

March 10 and 15, 3.30 p. m. (room 43): Howard University Medical School. Addresses by Dr. J. M. Aldrich on "Insects."

March 15, 8 p. m. (auditorium): The Botanical Society of Washington. Addressed by Dr. E. W. Berry on "The first land plants"; by C. C. Plitt on "The altitudinal distribution of lichens in the Blue Mountains of Jamaica"; and by B. E. Livingston on "The water supplying power as related to the condition of a lawn in Baltimore", and by D. S. Johnson on "Seventeen years of revegetation of a denuded tropical valley."

March 16, 8 p. m. (room 43): The Wild Flower Preservation Society. Illustrated lecture by P. L. Ricker on "Native wild flowers."

March 17, 3.30 p. m. (room 43): Howard University Medical School. Illustrated address by Dr. C. W. Stiles on "Hook worms."

March 17, 4.45 p. m. (room 43): Anthropological Society of Washington. Talk by M. W. Stirling on "The Stirling expedition into Dutch New Guinea."

March 22, 3.30 p. m. (room 43): Howard University Medical School. Address by Dr. Maurice C. Hall on "Treatment of hook-worm disease."

March 24, 4.30 p. m. (room 43): Howard University Medical School. Address by Dr. L. O. Howard on "Some of the men in the world who have done something worth while."

March 29, 8 p. m. (auditorium): Extension Work, United States Department of Agriculture. Address by Dr. L. O. Howard on "Research work in entomology."

March 31, 3.30 p. m. (room 43): Howard University Medical School. Address by Miss Doris M. Cochran on "Reptiles."

April 5, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Address by O. C. Bradeen of the Forest Service on "Supplies of the Forest Service."

April 5, 8 p. m. (auditorium): The Botanical Society of Washington. Illustrated lecture by Prof. J. H. Priestly, of the University of Leeds, England, on "Light and growth of plants."

April 9, 7.45 p. m. (auditorium): Fourth National Oratorical Contest and Second International Oratorical Contest. Orations delivered by pupils of private and parochial schools in the Washington Star area. Music rendered by the Powell Junior High School orchestra.

April 12, 4.45 p. m. (room 43): Society for Philosophical Inquiry.

April 12, 8 p. m. (room 43): American Horticultural Society. Illustrated lecture by P. H. Dorset, of the United States Department of Agriculture, on "Plant hunting in northeastern China."

April 16, 2.30 p. m. (room 43): Daughters of the American Revolution.

April 19 to 21: District of Columbia Dental Society. Dental educational campaign for better teeth—better health. Auditorium used at regular intervals during daytime for exhibition of motion pictures, with music, illustrating how a child would feel whose teeth are in bad condition, and on the evening of the 19th for a meeting to award prizes for the winning dental poster and a play, by the pupils of Park View Public School, entitled "Bad baby molar." The auditorium lobby and the adjacent foyer also were utilized during this week for displaying special exhibits on the subject prepared by the United States Public Health Service, United States Army, United States Navy, Children's Bureau of the United States Department of Labor, Division of Physical Anthropology of the United States National Museum, the Baltimore College of Dental Surgery of the University of Maryland, Public School Dental Clinic of the District of Columbia Health Department, District of Columbia Dental Hygienist Association, and the District of Columbia Dental Society.

April 20, 8 p. m. (auditorium): Washington Society of Engineers. Address by R. H. Sargent, United States Geological Survey, on "The Alaskan aerial survey expedition of 1926, under the leadership of Lieut. B. H. Wyatt, United States Navy," illustrated with motion pictures.

April 26, 2 p. m. (auditorium): District of Columbia Public Schools and United States Forest Service. Illustrated address by C. E. Rachford of the United States Department of Agriculture on "Growth and destruction of the forest."

April 26, 8 p. m. (auditorium): American Dairy Federation. Extension Work, United States Department of Agriculture. Addresses by R. W. Dunlap, Assistant Secretary, Department of Agriculture; by A. F. Woods on "Research work of the department"; and by Dr. J. N. Mohler on "Progress of T. B. eradication." Exhibition of motion pictures by Department of Agriculture motion-picture service.

April 30, 8 p. m. (auditorium): Daughters of the American Revolution, conservation and thrift committee. Illustrated lecture by Herbert N. Wheeler on "The lure of the forest."

May 3, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Exhibition of motion pictures illustrating the Alaskan fisheries, game and forest, and vocal music by employees of the service.

May 4, 11.30 a. m. (auditorium): Fourth national oratorical contest and second international oratorical contest. Addresses by three competitors—John Oscar Bell, jr., William Alexander Loker, and Miss Bessie Cush—representing the Lee High School, Ballston, Va.; Leonard Hall School, Leonardtown, Md.; and Notre Dame Academy, Washington, D. C.

May 5, 8 p. m. (room 43): The Entomological Society of Washington. Addresses by C. F. White and W. E. Dove on "The creeping eruption"; and by P. W. Mason on "Discussion on the specialization of aphids from general feeders to monoxenous feeders."

May 10, 4.45 p. m. (room 43): Society for Philosophical Inquiry.

May 10, 8 p. m. (room 43): American Horticultural Society. Illustrated lecture by Dr. L. C. Corbett on "Production of vegetables in the United States."

May 14, 10 a. m. (room 43): Girl Scouts.

May 18, 8 p. m. (auditorium): Washington Philatelic Society. Illustrated address by Capt. I. C. Aker, United States Army, on "The flight of United States Army airplanes to South America."

May 28, 7.30 a. m. (room 43): George Washington University students. Meeting under leadership of Dr. Paul Bartsch.

May 28, 3.30 p. m. (auditorium): Federal Post No. 824, Veterans of Foreign Wars. Annual Memorial Service. Address by Dr. A. F. Woods, and music by the Navy band.

June 1, 11.30 a. m. (auditorium): Forest Service, United States Department of Agriculture. Illustrated address by E. E. Carter on "The Black Hills."

June 2, 8 p. m. (room 43): The Entomological Society of Washington. Notes and exhibition of specimens.

June 10, 3.30 p. m. (auditorium): Extension Service, United States Department of Agriculture. Illustrated lecture by Sir John Russell, director of the Rothamsted Experiment Station, England, on "Soils and plants."

June 16 to 23: Extension Service, United States Department of Agriculture. Conference of the National Farm Boys and Girls 4-H Club. Auditorium used for 10 general sessions and room 43 for 6 conferences of State leaders and special committee meetings. The program included an address of welcome by Hon. W. M. Jardine, Secretary of Agriculture; addresses by Mrs. Maole Walker Willebrandt, Assistant Attorney General; Dr. William M. Mann, director of the National Zoological Park; J. J. Tigert, United States Commissioner of Education; Hon. J. B. Aswell of Louisiana, and Dr. W. S. Abernethy, and an exhibition of motion pictures of birds.

June 20, 9.50 a. m. (room 43): Federal Agricultural Board, United States Department of Agriculture. Public hearing to consider the advisability of quarantining the State of Texas on account of the Morelos orange worm.

June 23, 8 p. m. (auditorium): Finals in the third annual national spelling bee under the auspices of the Courier-Journal, Louisville, Ky., and 16 associated newspapers, presided over by Hon. John H. Bartlett, First Assistant Postmaster General. First prize was won by Dean Lucas, of West Salem, Ohio.

The American Association of Museums.—The twenty-second annual meeting of the American Association of Museums convened in Washington, D. C., from May 23 to 25, 1927. The opening session on the forenoon of May 23 was held in one of the graphic art exhibition halls of the National Museum in the Smithsonian Building, where a temporary meeting place was arranged. This session was devoted to the subject "National problems of museums." The president of the association, Chauncey J. Hamlin, presided, and the delegates were welcomed by the Acting Secretary of the Smithsonian Institution, Dr. C. G. Abbot, who then addressed the assembly on

"The relation of the National Museum to the museums of the Nation." Paul M. Rea, director of The Cleveland Museum of National History, presented the report of the committee on museum finance. Other sessions of the convention were held elsewhere.

Receptions.—Three evening receptions were held in the Museum during the year.

The first floor of the Natural History Building was thrown open for a reception on September 14, 1926, to delegates to the Seventh International Conference of the International Union of Pure and Applied Chemistry and to members of the diplomatic corps of the countries belonging to the union. This followed the lecture by M. le Prince Ginori Conti earlier in the evening in the auditorium. Dr. William J. Hale, of the National Research Council, was in charge of the arrangements. Dr. Alexander Wetmore, assistant-secretary, represented the Smithsonian Institution on the receiving line.

On April 19, 1927, the National Gallery of Art and the other halls on the first floor of the Natural History Building were the setting for a reception to the Daughters of the American Revolution who were gathering in Washington for their annual convention. Music for the occasion was furnished by the Army band.

On the evening of June 20, 1927, the exhibition halls on the first and second floors of the Natural History Building were opened for a reception to the delegates and guests of the First International Congress of Soil Science, the Acting Secretary of the Smithsonian Institution, Dr. C. G. Abbot, heading the receiving line.

CHANGES IN ORGANIZATION AND STAFF

The organization of the Museum remained unchanged throughout the year, but the changes in the scientific staff included the loss of several prominent scientists.

In the department of anthropology, Thomas D. Stewart temporarily served as aid in the division of physical anthropology from December 1, 1926, to March 1, 1927, when he was permanently appointed to the position. The appointment of Dr. George Grant MacCurdy as collaborator in anthropology was extended for one year from March 1, 1927. Miss Isobel H. Lenman, of Washington, D. C., who has long been a benefactor of the national collections, was made collaborator in ethnology on March 30, 1927. Neil M. Judd, curator of American archeology, was on furlough from the Museum from July 1 to October 31, 1926, and during June, 1927, to direct explorations of the National Geographic Society.

In the department of biology Miss Doris M. Cochran was advanced from aid to assistant curator in the division of reptiles and batrachians on March 1, 1927. On December 11, 1926, A. Brazier Howell, corresponding secretary of the American Society of Mam-

malogists, was appointed collaborator in the division of mammals; and Albert C. Smith was given a similar appointment in the division of plants for one year from October 1, 1926.

In the department of geology Miss Margaret W. Moodey's title was changed on July 1, 1926, from recorder to aid; Dr. Paul Bartsch, curator of mollusks in the department of biology, was given appointment in the department of geology as curator of Cenozoic invertebrates from April 18, 1927; and Dr. Joseph A. Cushman, who has long worked on the national collections, was appointed collaborator in the division of stratigraphic paleontology for six months from May 10, 1927.

In the department of arts and industries, Carl W. Mitman was on furlough from July 1 to December 31, 1926, assisting in development of plans for an industrial museum for New York City, though he spent the week ends in Washington and continued general oversight of the work of the divisions of mineral and mechanical technology. R. C. Smith, aid in the division of graphic arts, was granted furlough for one year from October 8, 1926, to accept the assistant secretaryship of the American Association of Museums.

The Museum was deprived by death of several important members of its scientific staff, all of whom had long been associated with the Museum. They were Dr. Charles D. Walcott, keeper of the Museum; Dr. William H. Dall, honorary curator of mollusks and associate curator of Cenozoic collection; Dr. Frank H. Knowlton, custodian of mesozoic plants; Dr. Paul Haupt, associate in historic archeology. The death of George C. McClain, for over 40 years a member of the mechanical force of the Museum, came during the year.

Dr. Frank H. Knowlton, paleobotanist of the United States Geological Survey and custodian of mesozoic plants in the United States National Museum, died on November 22, 1926. He was born in Brandon, Vt., September 2, 1860, and graduated at Middlebury College in that State in 1884. He was a born naturalist, publishing his first paper, A List of the Birds of Brandon, Vt., in 1878. Shortly after graduation he entered the employ of the National Museum, first being appointed aid in the old division of fossil and recent plants under Dr. L. F. Ward, and in 1887 being advanced to assistant curator of fossil plants. After several summer's field work with United States Geological Survey parties he began to turn his attention more particularly to fossil forms and made his first contribution in 1888, a description of the silicified woods of *Araucarioxylon arizonicum* in the celebrated fossil forest in Arizona. In 1889 he was appointed assistant paleontologist on the survey, where he remained during the rest of his life, with the exception of a brief

period in 1892–93. In 1894 he was appointed honorary custodian of mesozoic plants in the National Museum, a title that he held to the time of his death. In 1907 he gained the full rank of geologist on the survey, retaining his quarters in the National Museum where he had access to the collections upon which his work was based.

Doctor Knowlton was an earnest student, in manner kindly and genial. For the greater part of his career he was afflicted with chronic bronchial asthma, which seriously interfered with his work but never dampened his enthusiasm nor altered his kindly disposition.

On February 2, 1888, Dr. Paul Haupt (born Görlitz, Germany, November 25, 1858), professor of the Semitic languages at Johns Hopkins University, of Baltimore, Md., was appointed honorary curator of the newly established section of oriental antiquities, and, with Dr. Cyrus Adler as assistant curator, began the preparation of a study series of casts of Assyrian and Babylonian antiquities. In 1898 he was appointed honorary curator of the division of historic archeology, and in 1905 associate in historic archeology, a position held at his death December 17, 1926. This long and active connection was of incalculable benefit to the Museum, as Doctor Haupt, a world acclaimed authority on Orientalia, was always at hand to give council on this subject. Doctor Haupt was a master of Biblical exegesis. He was an indefatigable worker and his writings on Biblical and Assyrian philology, archeology, history, comparative Semitic grammar, Sumerian, and similar subjects, number more than 400.

William Healey Dall, honorary curator of the division of mollusks and cenozoic invertebrates in the National Museum, died March 27, 1927. Doctor Dall was born in Boston, Mass., August 21, 1845, and studied under Louis Agassiz at the museum in Cambridge during 1862 and 1863. In 1865 when a very young man he was appointed chief of the scientific corps of the Western Union International Telegraph expedition to Alaska, a place which he held for three years. It was on his return from this expedition that, through the influence of Professor Baird, he became affiliated with the Smithsonian Institution, a connection which lasted 58 years. From 1870 to 1885 he was an assistant in the Coast Survey and spent several years in exploration in Alaska. In 1885 he was appointed a paleontologist of the Geological Survey, a place which he held until his retirement in 1925, with office in the National Museum, where he had especial charge of fossil mollusks. To Doctor Dall belongs the credit for establishing the splendid organization, installation, and care of the division of mollusks and cenozoic invertebrates in the National Museum, which, under his leadership has grown to be the largest of its kind in the world.

DETAILED REPORTS ON THE COLLECTIONS

REPORT ON THE DEPARTMENT OF ANTHROPOLOGY

By WALTER HOUGH, *Head Curator*

A year of increased activity in exploration has swelled the receipt of specimens in this department beyond precedent. Work conducted by Dr. J. Walter Fewkes, Chief of the Bureau of American Ethnology, at an ancient pueblo near Flagstaff, Ariz., resulted in an excellent collection of material from that source. Through funds provided by the Bureau of American Ethnology field researches were made possible during the field season of 1926; by Dr. Aleš Hrdlička, curator of physical anthropology, in reconnaissance of many sites of ancient villages in Alaska; by Herbert W. Krieger, curator of ethnology, at Indian sites on the upper Columbia River and in southern Alaska; by Henry B. Collins, jr., assistant curator of ethnology, in archeological investigations in Louisiana and Mississippi, and in 1927 by the head curator at Indian Mound in western Tennessee, where a number of sites were examined that gave many archeological specimens. The work of Neil M. Judd, curator of American archeology at Pueblo Bonito, N. Mex., under funds provided by the National Geographic Society, has been continued during the present year. Especially noteworthy in its importance to the Museum was the exploration of unknown parts of Dutch New Guinea by Matthew W. Stirling, formerly assistant curator of ethnology, through private means supplied by Mr. Stirling and his associates. This enterprise, originated by Mr. Stirling, was carried out as a joint exploration by the Dutch Colonial government of the East Indies and Mr. Stirling, representing the Smithsonian. The expedition made use of an airplane furnished by Mr. Stirling for preliminary reconnaissance and then penetrated inland across the Lake Plain of New Guinea to the pygmy settlements in the Nassau Mountains along river routes examined from the air. The cooperation of the Dutch Government in these investigations is highly appreciated.

Parties in the field at the close of the fiscal year included Mr. Judd, at Pueblo Bonito; Henry B. Collins, jr., assisted by T. Dale Stewart, aid in the division of physical anthropology, at Nunivak Island, Alaska; and Herbert W. Krieger, on the Yukon River, Alaska.

ACCESSIONS FOR THE YEAR

Accessions in this department for the year numbered 148, 24 more than in the previous year, while the number of specimens added totaled 12,974 against 4,223 in the fiscal year 1926.

Of first importance was the collection of several thousand objects presented by Matthew W. Stirling and resulting from the exploration mentioned in the interior of New Guinea. This consists of bows and arrows, hafted stone axes, stone knives, chisels; woven bags, armor, wristlets; innumerable barbaric ornaments, necklaces, headdresses; fire thongs, pipes, salt bundles, and many other objects secured often in series and forming a wonderful exhibit of the material culture of these peoples. This material is entirely new to the Museum collections and contains much previously unknown to science, especially where secured from hitherto unvisited Papuans and from Negritos of the Nassau range in central Dutch New Guinea.

Current exploration and investigations in the ethnology and archeology of Alaska by the Bureau of American Ethnology resulted in several valuable collections. That obtained by Dr. Aleš Hrdlička in the summer of 1926 consisted of many ancient and modern artifacts, much extending the Museum's fine collection from Alaska. In this connection material lent by Karl Lomen is important as it contains many specimens of etching and carving on fossil ivory made by extinct people belonging to some as yet undetermined race. A noteworthy American Indian collection received as a gift from C. H. Heyl, 2d., consists of valuable painted shields, headdresses, paintings on skin, bows and arrows, costumes, beadwork, and other objects collected by the late Col. C. H. Heyl, United States Army. Several hundred specimens of Philippine ethnologica, given by Gen. Tasker H. Bliss, United States Army, consist of costumes, weapons, weavings, and other objects of value. From Miss Isobel H. Lenman there were received as a loan over 100 rare headdresses, ornaments, and other objects from the Pacific Islands. Mrs. Richard Wainwright also presented a number of Indian baskets, pieces of pottery, and stonework.

The division of American archeology makes special mention of the large contribution of the National Geographic Society in material collected by Neil M. Judd at Pueblo Bonito, N. Mex., during his several seasons of successful field work. The specimens, numbering 2,480, including many lots, consist of pottery, stone, bone, wood, and shell artifacts of the advanced material culture of this ancient pueblo whose inhabitants have passed into oblivion. The society also presented material secured from Pueblo del Arroyo, N. Mex., from small house sites near Chaco Canyon, and from other pueblo sites in the canyon. A large collection excavated by Dr. J. Walter Fewkes

from a ruin named Eldon Pueblo, near Flagstaff, Ariz., consisting principally of pottery new to the Museum, was transferred from the Bureau of American Ethnology. Herbert W. Krieger, exploring for the bureau, brought back a large collection of pottery, stone, and bone implements and ornaments from extended investigations of sites on the Upper Columbia River. The field work of Henry B. Collins, jr., for the bureau in Louisiana and Mississippi resulted in important specimens. A series of earthenware vessels, stone implements, and shards, was collected by Dr. Manuel Gamio, of Mexico, for the Archaeological Society of Washington, who loaned them to the Museum. Nine stone images from Tennessee, purchased from the collection of the late W. E. Myer, were transferred from the Bureau of American Ethnology.

The most valuable addition during the year to the division of Old World archeology, both from archeological and artistic point of view, is the collection of objects of Jewish religious ceremonial objects, Maccabean coins, and Palestinian antiquities and art works, comprising manuscript scrolls of parts of the Scriptures, marriage contracts, lamps, and silverware used in the religious life of the Jews, filling out many gaps in the section of Judaism in the exhibit of religions, received as a loan from E. Deinard. Among other accessions are such rarities as a manuscript on palm spathe from the Battaks, a tribe living in the central highlands of Sumatra, Dutch East Indies, the only non-Mohammedan lettered people in the Indian Archipelago, presented by Miss Rose E. Fankhauser; and a magnificent Buddhist manuscript measuring 23 by 2½ inches, written in Siamese Pali on palm leaves, held between covers which are beautifully gilded, lacquered, and ornamented with mythical animals and floral designs, received as a gift from the Siamese National Library, H. R. H. Prince Damrong, president, Bangkok, Siam, through Dr. Hugh M. Smith.

In the division of physical anthropology the most important accessions were those of the skeletal material and photographs made by the curator in Alaska and transferred to the Museum by the Bureau of American Ethnology. The collection embraced 58 Indian and Eskimo skeletons, 342 separate skulls, large numbers of lower jaws and other parts of the skeletons. The photographs, mainly portraits of the natives, include several hundred, of which about 150 were made by the curator. A further important acquisition by the division was a set of valuable casts of the Krapina early man, obtained through Prof. Karl Gorjanovic-Kramberger, of the Geologicko-Paleontologicko Museum, Zagreb, Jugoslavia. Other valuable accessions include 63 Indian crania, with some other skeletal parts, collected in mounds and burial sites of Louisiana and Mississippi by Henry B. Collins, jr., of the division of ethnology, and transferred by

the Bureau of American Ethnology; a gift of 16 skulls from old burials in Hopkinsville, Ky., from the Phillips Academy, Andover, Mass., through Warren K. Moorehead.

Accessions in the section of musical instruments consisted of two harpsichords in glass cases, the gift of Hugo Worch, and three old square pianos, also presented by Mr. Worch.

In the section of ceramics notable accessions during the year were 64 specimens of Chinese pottery and bronze received as a loan from the estate of Gen. C. F. Humphrey, United States Army; an old American plate decorated with a spread eagle, gift of Robert D. Weaver; a copy of the oldest Worcester jug, donated by Mrs. Marian Bruce Clark; and pewter, snuff boxes, and a condiment set, a gift from Mrs. Stephen B. Stanton.

Accessions received during the year in the section of art textiles consisted of several French ecclesiastical paintings of the thirteenth century, lent by Mrs. Alice C. Barney; an especially fine old bag worked with beads and silk, several snuff boxes, and embroidered handkerchief, presented by Mrs. Stephen B. Stanton; 15 pieces of lace, donated by Miss Isabella C. Freeman and Mrs. B. H. Buckingham; and an Italian white linen hand-woven towel, gift from Mrs. Belle Bushnell. A Duchess lace fan was received as a bequest from Mrs. Sophia L. Rutherford.

INSTALLATION AND PRESERVATION OF COLLECTIONS

Rearrangements of exhibits in ethnology were on a rather extensive scale due to the return of the collection sent for exhibit to the Sesquicentennial Exposition, and also to the transfer of the Piney Branch quarry group to the division of archeology. The present exhibit was improved whenever possible by the introduction of types of processes or methods employed by aboriginal artisans. The antique ironwork presented by Heinrich Meyn was placed on public view, cases containing Alaskan ivories, collected by Doctor Hrdlička and Karl Lomen were placed in the Eskimo section, and the splendid collection of Moro brass lent by Maj. Edward Dworak, United States Army, was installed in the Philippine section. Porcelains and bronzes from the estate of Gen. C. F. Humphrey, United States Army, were exhibited in the Chinese pagodas.

In American archeology the return of exhibits from the Sesquicentennial necessitated considerable reinstallation. A case was designed for the Tuxtla statuette, the oldest dated antiquity in the New World, to give it more effective setting, and a special case was made to exhibit as a transparency a photographic enlargement of one of the Atlantean figures from the Temple of the Warriors at Chichen Itza, Mexico.

In the division of Old World archeology additions were installed in the exhibit of Judaism and in the prehistoric collection from Palestine. In the Mohammedan case models of religious buildings from Sumatra were installed, as also the lately added collection of Chinese and Tibetan religious specimens. The Parsee collection and the Warner collection of Buddhism were reinstalled. The collections of Paleolithic remains from France and other localities were classified and placed in storage.

During the year the division of physical anthropology added to the public exhibits of early man; prepared three cases of exhibits of Alaskan archeological material obtained by the curator last summer; and prepared three cases of exhibits on the variation of human teeth and jaws as a special exhibit from April 19 to 23 for the dental convention held at that time. In the office rooms it was necessary to rearrange a large part of the collection, due to new accessions of the last four years, and to endeavor, under difficulties, to keep the collections for which no racks exist in something approaching order.

Mr. Hugo Worch, collaborator of the section of musical instruments, prepared labels for the excellent collection of pianos given by him. One of the real improvements of the violin, invented by Emile Berliner, was tested by Mrs. Duff-Lewis before the Friday Morning Club with success. G. D. McCoy, of the head curator's office, assisted in the care of the collection of pianos.

The art textiles and ceramics have been put under the special care of R. A. Allen. The Barney French church panel paintings and a number of small lots of laces were installed in the section of art textiles. Thirteen cases holding brocades are being fitted with sashes. Miss Edith Long rearranged the cases of the Misses Long, containing specimens illustrating the art of the thread.

In the anthropological laboratory, under the direction of W. H. Egberts, a figure was made for the dress of Mrs. Calvin Coolidge to be exhibited in the period costume collection. A cast of a large iron meteorite was made for the department of geology, and various restorations and repairs of pottery were undertaken for the Bureau of American Ethnology. Of especial interest was the restoration of white salt glaze tableware from the fragments from the excavations around the foundation of the Washington home at Wakefield, Va. Much work was done on modeling and repairing lay figures. A death mask of the late Secretary Charles D. Walcott, made by Doctor Hrdlička, was developed and appropriately mounted on a pedestal. Participation in the Sesquicentennial necessitated a great amount of dismantling and setting up of cases of exhibits.

INVESTIGATION AND RESEARCH

Research by members of the staff in ethnology was chiefly limited to the study of collections obtained in the field during the previous season. Research by outside investigators was aided by Museum specimens from Polynesia, the Pueblo region, Berber, and other North African material, Tibetan and west Chinese collections, the Catlin collection, and Northwest coast designs. Much information was given to persons bringing in specimens and material was determined in several instances for other museums. A number of inquiries concerned the preservation of ethnological material of various kinds. The head curator completed a research on the use of fire from the material in the heating and illumination collection of the Museum and prepared a memoir that will appear in the autumn. Dr. A. V. Kidder, of Phillips Academy, with Mrs. Kidder made an extended study of our great collection of modern Zuni Indian pottery, with the intention of preparing a report on the subject. Miss Irene Mermet of Washington was given much advice and made extensive use of the head curator's library in preparing for ethnological work in Mexico. Miss Frances Densmore completed researches on the collection of musical instruments and finished the manuscript of a handbook dealing with this subject which was printed. M. R. Harrington, of the Museum of the American Indian, Heye Foundation, New York City, arranged for study of the costume collection with a view of publishing a work on the subject of American Indian costume. Miss Mary Lois Kissell, of the American Museum of Natural History, New York City, studied the material on Salish weavings for a paper for the Bureau of American Ethnology. H. D. Skinner, of Otago University, Dunedin, New Zealand, on a traveling fellowship from Oxford, made a study of the Polynesian collections of the Museum, especially those of the Maori.

Individual Boy Scouts were aided with advice as to fire making. The custom houses of Georgetown and Baltimore were aided in determining the age of materials passing through customs.

In the division of American archeology at the time of this report the curator, Mr. Judd, is directing the National Geographic Society's explorations in Pueblo Bonito. Among investigators from other institutions who have visited the Museum for examination and study of its archeological collections may be mentioned Dr. and Mrs. A. V. Kidder and Warren K. Moorehead, of the Peabody Museum at Phillips Academy, Andover, Mass.; Superintendent and Mrs. Jesse L. Nusbaum, of the Mesa Verde National Park, Colo.; Dr. W. B. Hinsdale, of the department of anthropology, University of Michigan, Ann Arbor, Mich.; H. C. Shetrone, of the Ohio State Historical Society, Columbus, Ohio; S. W. McCallie, State geologist, Atlanta, Ga.; E. H. Morris and Karl Ruppert, Carnegie Institution of Wash-

ington; Mrs. Zelia Nuttall, Casa Alvarado, Coyoacan, D. F., Mexico; and Dr. Manuel Gamio, former director of antiquities, Mexico City. In addition, Miss J. Dolores Calahan, of the National Geographic Society's Pueblo Bonito expedition, beginning March 1, was engaged in work on the expedition's collections. Twenty lots of material were received for examination and report. As opportunty offered the curator has, at his own expense, visited other institutions for study of their archeological collections. These have included the New Mexico State Museum at Santa Fe; the Arizona State Museum at Tucson; the Southwest Museum, Los Angeles, Calif.; the University Museum and the Academy of Science, Philadelphia Pa.; the Museum of the American Indians, Heye Foundation, and the American Museum of Natural History, in New York City, and the Brooklyn Institute of Arts and Sciences. During the early part of March the curator visited the Etowah Mound group, near Cartersville, Ga., where Mr. Moorehead, of the Peabody Museum, Phillips Academy, Andover, Mass., was conducting explorations. As a result of this brief sojourn the Museum's collections from Etowah Mound may shortly be exhibited to greater advantage.

Warren K. Moorehead made a census of the stone implements in our collections, a work in which he expects to cover the museums of the country. P. E. Cox, State archeologist of Tennessee, advised with the Museum as to problems encountered in his work. Dr. Manuel Gamio, distinguished archeologist of Mexico, spent much time in the Museum writing a report on his collections from old sites in Guatemala, where he explored for the Archaeological Society of Washington.

The time of the assistant curator in charge of the division of Old World archeology was mainly occupied in the study of the collections concerning historic religions and in the preparation of a publication on the subject. Henry Field, of the Field Museum of Natural History, Chicago, Ill., examined the prehistoric collections of the division.

Research by the curator of physical anthropology has been continued in the two major lines of man's evolution and antiquity and of the origin and antiquity of the American aborigines. In addition, a survey was made, at a request of the "Committee on the Negro" of the National Research Council, of what has been done to date on the anthropology of the American negro. Henry B. Collins, jr., of the division of ethnology, conducted an investigation on the temporo-frontal articulation in the human skull. Among researches carried on with our material, under the curator's guidance that have been completed and published, may be mentioned those of C. J. Connolly, of the Catholic University, Washington, D. C., On the Location of the Nasion, and On the Relation of the Orbital Plane in the Human Skull to Position of Teeth. In addition, the following have carried

on investigations in this division: Dr. E. R. Reynolds, of Boston, Mass., November 3, 1926, to February 24, 1927, anthropological studies on the pelvis; Dr. Francis W. Nash, of Washington, D. C., November 5, 1926, and subsequently, study of jaws and teeth; Dr. E. C. Kirk, Philadelphia, Pa., March 29 to April 2, 1927, study of jaws; Miss Frances Dennets, Brown University, March 30–31, instruction in anthropometry; Miss Alice M. Townsley, Brown University, May 2–6, 1927, instruction in anthropometry; and Dr. A. Wolfson, East Orange, N. J., June 7–8, 1927, facial anthropology.

From duplicate specimens the division has furnished 42 Indian teeth and 26 old Egyptian teeth to Dr. T. Okumura, Dean of the Tokyo Dental College, and casts of Ameghino's "diprothomo," "tetraprothomo," and "tertiary" atlas to Prof. J. Matiegka, Chief of the Anthropological Institute, Prague, Czechoslovakia.

The head curator read a paper on dolls and anthropomorphic images before the meetings of the American Association for the Advancement of Science in Philadelphia which attracted wide attention, and a popularized article on the subject appeared later in the Sunday New York Times. A tentative plan for an exhibit for the exposition to be held in October 1928 in Seville, Spain, was drawn up by the head curator to cover in part the proposed participation of the Smithsonian.

Among distinguished visitors in the department were four members of the faculty and administration of the University of Paris, who considered the exhibit series unique and excellent. Dr. H. H. Juynboll, Director of the Leiden Museum inspected the collections.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

During the year the division of ethnology presented the Henry Ford Museum, Dearborn, Mich., with 47 patent models of lamps. Exchanges made during the same period comprised six sendings totaling 97 specimens, as follows: The Amerindian Museum, Paterson, N. J., 4 specimens of American Indian handiwork; National Museum, Copenhagen, Denmark, 50 pieces of American Indian ethnologica from North America and Panama; H. T. Harding, Walla Walla, Wash., 8 specimens of basketry, pottery, and similar material from the Indians of the western United States; W. T. Jewell, East Falls Church, Va., a Philippine kris; Public Library, Museum, and Art Galley, Perth, Australia, 33 pieces of North and South American pottery, and J. T. Watkins, Lakeport, Calif., a bed-warming pan. Four loans have been made as follows: New Public Library, Birmingham, Ala., 47 specimens of Eskimo and Chinese handicraft; Florida State College for Women, Tallahassee, Fla., 11 ceremonial objects of carved wood from Alaska, British Columbia, United States, and Panama; New Haven Progress Exposition, New Haven, Conn., 14

examples of pewter ware from Europe and the United States; and the Public Library, Washington, D. C., 74 specimens of Oriental art, Mrs. George Kennan, Medina, N. Y., withdrew seven weapons from her collection on exhibit.

Six lots of material have gone out from the division of American archeology during the year to aid other institutions: To the Indian Museum, Calcutta, India, 94 aboriginal stone implements in exchange for similar material for the division of Old World archeology; to the National Museum, Copenhagen, Denmark, 21 archeological specimens in exchange for ethnological material; to the Hastings Museum, Hastings, Nebr., 96 stone implements from the United States and the West Indies, as gifts; to W. C. Marsh, Anchorage, Alaska, cast of a leaf-shaped flint blade in exchange for the original; to the Southwest Museum, Los Angeles, Calif., a lot of miscellaneous potsherds, unaccessioned, from Eldon Pueblo, near Flagstaff, Ariz.; and to the North Carolina State Museum at Raleigh, casts of a bannerstone and a steatite bowl in exchange for the courtesy of reproducing the originals for the national collections.

The division of physical anthropology forwarded as a gift 11 samples of human hair to Mount Holyoke College, South Hadley, Mass., and loaned a human skull to the Office of Motion Pictures, United States Department of Agriculture. A human skull, probably a mix-blood, from Cuba was exchanged with W. H. Egberts for the skull of a white man.

NUMBER OF SPECIMENS UNDER DEPARTMENT

There were 148 accessions with the remarkably large total of 12,974 specimens received in the department of anthropology during the year just ended. Of these, 10 accessions, comprising 755 specimens, were loans, the permanent accretion to the national collections being 12,219 specimens, as compared with 4,005 specimens for the previous year. The additions were distributed as follows: Ethnology, 57 accessions with 5,648 specimens; American archeology, 44 accessions and 5,039 specimens; Old World archeology, 13 accessions of 1,546 specimens; physical anthropology, 36 accessions with 638 specimens; musical instruments, 3 accessions and 5 specimens; ceramics, 5 accessions of 74 specimens; and art textiles, 7 accessions with 24 specimens.

On June 30, 1927, the total number of specimens in the department was 668,312, as follows:

Ethnology	164,062
American archeology	429,515
Old World archeology	34,903
Physical anthropology	30,531
Musical instruments	2,068
Ceramics	5,824
Art textiles	1,489
Total	668,312

REPORT ON THE DEPARTMENT OF BIOLOGY

By LEONHARD STEJNEGER, *Head Curator*

The main efforts of the staff of this department during the past fiscal year have of necessity been confined to the preservation of the steadily growing collections. It is a matter of congratulation that no serious arrears are to be reported in this work, though this result has been achieved often at the expense of the research work of the divisions, as the members of the scientific staff have had to spend an undue amount of time and labor on purely curatorial work which might have been done by clerical and custodial help had such been available. Further assistance in the department is absolutely essential, as the present condition whereby highly trained personnel is employed in routine that should be performed by assistants has reached a point where it interferes seriously with the scientific work that public interest demands.

Field work under this department has, as in previous years, been curtailed through lack of funds. Doctor Schmitt, under the Walter Rathbone Bacon scholarship, carried on field studies of the crustacean fauna of the western coast of South America. Dr. Hugh M. Smith, associate curator in zoology, through funds supplied by the Museum, has gathered and forwarded rich collections from Siam, and small collections have come from western China from the native collector trained by D. C. Graham who has continued work during Mr. Graham's absence in the United States on small amounts of money furnished by the Smithsonian Institution. Assistant Secretary Wetmore visited Haiti and the Dominican Republic from March to June, traveling at the expense of the Swales fund. Important botanical collections have come from the work of Doctor Maxon in Jamaica and Mr. Killip and Mr. Smith in Colombia. These and other activities of a similar nature are detailed fully elsewhere in the report of the Assistant Secretary.

ACCESSIONS FOR THE YEAR

The total number of accessions to the various divisions was 1,277, a slight increase over the corresponding figures of last year. The increase in the number of specimens received by the various divisions averages considerably more than last year, except in the division of insects, which reports a falling off, due to the fact that last

year's report included 82,000 lepidoptera in the Dognin collection. The increase of specimens in the department during the past fiscal year amounts to more than 197,000.

Apart from such special accessions as 20,000 specimens of water beetles donated by John D. Sherman, and 10,000 moths presented by Doctor Schaus, which will be specifically mentioned later on, the largest and most comprehensive collections received during the year are as follows:

Dr. Hugh M. Smith, director of fisheries, Bangkok, Siam, an honorary associate curator in zoology, United States National Museum, was instrumental in bringing together exceedingly important and valuable collections of Siamese mammals, birds, reptiles, amphibians, fishes, insects, mollusks, and marine invertebrates, which fill a distinct gap in the Museum's collections between the Chinese material from the north and that secured by Dr. W. L. Abbott from the Malay Archipelago to the south that has come in previous years. Another valuable addition consists of the mammals, birds, and reptiles gathered by the Smithsonian-Chrysler expedition to Africa. Dr. Waldo L. Schmitt's South American expedition under the auspices of the Walter Rathbone Bacon traveling scholarship, apart from rich collections of crustaceans, the principal object of the expedition, resulted in large additions in other branches of zoology. Owing to the unsettled conditions in China during the past year, collections from that country which recently have played a leading part among our accessions, have fallen off considerably; nevertheless collections of birds, reptiles, and fishes which have been received from A. de C. Sowerby through the generosity of Col. R. S. Clark, are highly important. They are supplemented by various small collections made by the native collector trained by Rev. D. C. Graham.

Mammals.—The small mammals (154 specimens) obtained by Dr. Hugh M. Smith in Siam are particularly important to the Museum in connection with the large collections of Malay mammals that have been presented by Dr. W. L. Abbott. The 154 mammals, mostly of small size, collected by Arthur Loveridge in Tanganyika Territory, Africa, while attached to the Smithsonian-Chrysler expedition, are also deserving of special mention. By exchange with the Instituto de la Salle, Bogota, Colombia, 238 small mammals were obtained from that locality. In the same manner, 17 specimens from Russia were acquired from the Zoological Museum of the Academy of Sciences, Leningrad, Union of Socialistic Soviet Republics. Two species representing genera not previously in the Museum were received in exchange with the American Museum of Natural History in New York City. A skin of the rare pigmy hippopotamus from Sierra Leone, Africa, was presented by W. N. Martin, Rouzerville, Pa.

Birds.—The valuable collection of Chinese birds from Col. R. S. Clark, the Siamese birds obtained from Dr. Hugh M. Smith, and the material received from the Smithsonian-Chrysler expedition have already been referred to. The year has been particularly profitable, as in addition to these comprehensive collections representatives of 18 genera and 120 species and subspecies hitherto lacking in the collection have been added, mostly through the generosity of friends. B. H. Swales, honorary assistant curator, donated 176 skins and 7 skeletons, including 46 species and 4 genera new to the Museum. About 100 of the skins come from the States of Parahyba and Ceará, Brazil. Dr. Charles W. Richmond, associate curator, presented 66 skins and 3 skeletons, mostly from South America and Africa, and including 9 genera and 36 species hitherto unrepresented in the Museum, the species being chiefly tanagers, warblers, vireos, and honey creepers. Dr. Thomas Barbour, Cambridge, Mass., generously gave a specimen each of two genera of birds *Torreornis inexpectata* and *Ferminia cerverai* recently discovered in Cuba. Two species of love birds of the genus *Agapornis* new to the Museum were donated by E. S. Schmid, Washington, D. C., and C. H. Popenoe, Silver Spring, Md., respectively. Dr. Casey A. Wood, collaborator in the division of birds, presented Fijian birds, among them a species of flycatcher new to the Museum. A skin of *Pterocnemia tarapacensis*, a rhea from Argentina, new to the collection was presented by D. O. King of Mendoza, Argentina. The skeleton collection was enriched with many additional genera and species, among them a skeleton of *Monias benschi* from Madagascar and a trunk skeleton of the monkey-eating eagle *Pithecophaga jefferyi* from the Philippine Islands. Among the many other contributors of valuable additions, Victor J. Evans, Justus von Lengerke, and Col. Wirt Robinson may be mentioned. From Edward L. Caum, Honolulu, T. H., 10 alcoholic specimens and 4 eggs of the Laysan rail (*Porzanula palmeri*) were received as a gift.

Reptiles and batrachians.—The Siamese and Chinese collections received respectively from Dr. Hugh M. Smith and Col. R. S. Clark, and the African collections of the Smithsonian-Chrysler expedition, constitute the bulk of the valuable accessions of this year. In addition, a collection of herpetological material from Guatemala transferred by the United States Biological Survey, and a set of specimens from Lower California presented by the Navy Department in cooperation with the California Academy of Sciences, have been added to the collection.

Fishes.—The increase in the number of specimens received during the present year over that of the preceding year is considerable. For one of the most valuable collections of Chinese fishes received in recent years we are indebted to the generosity of Col. R. S. Clark;

no less than 1,743 specimens were collected by Arthur de C. Sowerby during the past three years in the waters contiguous to Shanghai. Dr. Waldo L. Schmitt, as a result of his South American expedition under the auspices of the Walter Rathbone Bacon scholarship, brought home 111 specimens representative of the fish fauna of Juan Fernandez Island, off the Chilean coast. The United States Bureau of Fisheries transferred 338 specimens from various localities, among them the types of seven new species. Similarly, 187 specimens from various localities in Central and South America, Haiti, and Porto Rico were received from the International Health Board, these being of special interest in that they are known as destroyers of larvæ and so assist in mosquito-control work. Dr. Hugh M. Smith donated 21 fishes from Siam, and Dr. W. H. Longley, of Goucher College, 76 from the Tortugas, Fla. A. J. Poole and Dr. Remington Kellogg, during a trip to the porpoise station at Hatteras, N. C., collected 1,239 specimens for the Museum. In exchange with the Academy of Natural Sciences, Philadelphia, through Dr. H. W. Fowler, 238 specimens of fishes from the Hawaiian Islands were obtained.

Insects.—The outstanding gift to the Museum in this division was the special collection of about 20,000 water beetles presented by John D. Sherman, of Mount Vernon, N. Y. Another large donation, made by Dr. William Schaus, honorary assistant curator, was that of about 10,000 moths, mostly from Bolivia. Dr. H. G. Dyar, custodian of lepidoptera, presented the division with about 6,000 specimens of mosquitos obtained by him in summer collecting trips to Montana, representing quite completely the mosquito fauna of that region. Miss Theresa F. and W. E. Schoenborn presented the Museum with the splendid collection of lepidoptera made several years ago by their father, the late Henry F. Schoenborn of Washington, D. C. It includes a considerable number of named European species, but the larger part consists of specimens collected in the region about Washington. All are in excellent condition and where not especially needed for the general collection are to be part of the special collection of District of Columbia animals. Dr. E. A. Chapin, of the Bureau of Entomology, donated a very valuable collection of 121 alcoholic lots and 398 microscope slides of ectoparasites of Mallophaga fleas, mites, and pseudoscorpions. Through the instrumentality of Doctor Dyar, extensive shipments of mosquitoes and other blood-sucking diptera from Venezuela were received from Dr. M. Nunez-Tovar; these were sent primarily to secure identifications, but have added importantly to these collections. From Dr. Reinhold Meyer, of Germany, several shipments of named Old World Hymenoptera were received in exchange. The Philippine Bureau of Science, through R. C. McGregor, has sent several collections of Philippine insects during the year.

Marine invertebrates.—The total number of accessions for the present year was 120, covering some 17,840 specimens. Though the number of accessions was less than last year actually 6,588 more specimens were received. The more noteworthy additions are those secured by the expeditions mentioned above, some of which may be specifically enumerated here: From Dr. Hugh M. Smith, more than 250 crustacea in connection with his investigation of the fisheries of Siam; Capt. R. A. Bartlett, 776 specimens of marine invertebrates collected off the northwest coast of Greenland during the summer of 1926; Dr. Waldo L. Schmitt, a comprehensive collection of South American crustaceans, together with miscellaneous takings of hydroids, coelenterates, annelid worms, and other forms, the result of this year's travels under the Walter Rathbone Bacon scholarship; Clarence R. Shoemaker, 3,357 specimens collected at Tortugas, Fla., under the auspices of the Carnegie Institution Marine Biological Laboratory. The United States Bureau of Fisheries, as usual, transferred large and important collections, including nearly 300 samples of plankton, partly from the cruises of the *Grampus* and the *Bache*, and partly from the *Albatross* Philippine tow-net hauls, in addition to 66 lots of Euphausiaceae and Mysidaceae, the basis of Dr. Walter M. Tattersall's report on these forms from the western Atlantic. Melbourne Ward, Sydney, New South Wales, Australia, presented 167 specimens of crustacea from the coast of New South Wales, a region but meagerly represented in our collections. Among the smaller contributions many deserve special reference as containing valuable type material. R. E. Coker, Chapel Hill, N. C., presented a number of slides of crustaceans, among them types of three species and subspecies; Prof. Arthur Willey, McGill University, Montreal, Canada, deposited the type specimens of the copepod *Moraria laurentica*, and Dr. Stillman Wright, University of Wisconsin, the holotype and paratype of *Diaptomus inundanus*. This courtesy of depositing types in the National Museum is highly appreciated. Dr. Frank Smith, University of Illinois, presented 10 specimens of earthworms, including holotypes of two new species, together with 511 microscope slide mounts of serial sections of earthworms.

Mollusks.—There was a slight decrease both in the number of accessions and specimens in this division. Among those received, mention is made of the following as of particular merit. Dr. Hugh M. Smith sent about 620 specimens of mollusks and squids from Siam; Gen. Tasker H. Bliss, United States Army, Washington, D. C., presented about 2,500 specimens of marine shells from the Philippine Islands; C. Walton, Peterhead, South Australia, supplied the types and a number of paratypes of 18 new species and subspecies of *Thersites* (*Hadra*) from islands in Torres Straits; the Rev. David

C. Graham forwarded approximately 100 specimens of mollusks in continuation of collections he has made in China; C. Ping, University of Amoy, China, sent 178 lots, about 500 specimens of land, fresh-water, and marine shells from China, some being new to the collection and some extending the distribution of species; Prof. Auguste Teisseire, Colonia, Uruguay, presented 75 lots, about 127 specimens, of fresh-water bivalve shells, which contained the types and a number of paratypes of new species of *Corbicula* and many fine specimens of other species of that genus; Dr. H. A. Pilsbry, Academy of Natural Sciences, Philadelphia, sent four paratypes of *Physa zionis* Pilsbry from Zion Park, Utah; Dr. Henry Pittier, Caracas, Venezuela, forwarded 5 species, 9 specimens of fresh-water shells, including the types and 3 paratypes of 2 species; C. C. Allen, St. Petersburg, Fla., 57 lots, about 350 specimens of mollusks from Florida, the Bahamas, and Cuba; Dr. William A. Hoffman, University of Porto Rico, 67 specimens of land and marine shells; Ralph W. Jackson, 2 specimens of pearly fresh-water mussels, the type and paratype of a new species, *Diplodon jacksoni* Marshall; D. Bramwell, Jamaica, British West Indies, 40 lots, about 1,000 specimens, of mollusks; Joseph Harrison, Jamaica, British West Indies, 34 lots, approximately 200 specimens, of mollusks; D. Thaanum, Honolulu, Hawaii, 26 species, 61 specimens, of marine shells from Japan; Richard Buhlis, Imboden, Ark., 60 lots, 60 specimens, of pearly fresh-water mussels; J. Morgan Clements, Papeete, Society Islands, 60 species, about 225 specimens, of mollusks from Cook Islands; and Dr. F. Felippone, Montevideo, Uruguay, 20 lots, consisting of 28 specimens, of marine and land shells from Uruguay.

Echinoderms.—The number of accessions received during the year was 17, more than twice the number received last year. The total number of specimens incorporated in the collection was 368, as compared with 41 last year. The most noteworthy accessions were the sea urchins of the family Cidaridae which were collected by the Bureau of Fisheries steamer *Albatross* on the Philippine expedition in 1907-1910 and reported upon by Dr. Th. Mortensen of the Zoological Museum, Copenhagen, Denmark, and the several collections made on the coast of South America by Dr. Waldo L. Schmitt, curator of marine invertebrates, while traveling under the Walter Rathbone Beacon fund.

Plants.—There were 490 accessions in this division, comprising 55,750 specimens of great value, representing a slight gain in both accessions and specimens over the preceding year. The more important accessions are as follows: 9,203 specimens received as a transfer from the Bureau of Plant Industry, United States Department of Agriculture, including 5,512 mounted grasses and 1,436 Chinese specimens collected by P. H. Dorsett; 9,500 specimens of plants from

Colombia, collected for the Museum by E. P. Killip and Albert C. Smith; 11,000 specimens of Jamaican plants, chiefly ferns, collected for the Museum by William R. Maxon; 3,550 specimens from southern China, presented by the National Geographic Society, Washington, D. C.; 2,000 specimens of Chinese plants, received from the University of Nanking, China, in exchange; 1,300 specimens of plants from Asia, received as an exchange from the Museum d'Histoire Naturelle, Paris; 768 specimens of Chilean plants presented by the Rev. Brother Claude Joseph, Temuco, Chile; 1,051 specimens, chiefly from North America and Cuba, received as an exchange from the Riksmuseets Botaniska Avdelning, Stockholm; 555 specimens from Mexico and Central America, received as an exchange from Universitetes Botaniske Museum, Copenhagen; 3,035 specimens from New Mexico, presented by the Rev. Brother Arsene, Las Vegas, N. Mex.; 484 specimens chiefly of tropical American trees, presented by the Yale school of forestry, New Haven, Conn., through Prof. Samuel J. Record; 380 specimens from Peru, presented by Prof. Fortunato L. Herrera, Cuzco, Peru; 297 specimens received as an exchange from the Gray Herbarium of Harvard University, Cambridge, Mass.; 348 specimens from Alberta, presented by A. H. Brinkman, Craigmyle, Alberta, Canada; 481 specimens of Greenland plants received from the Danske Arktiske Station, Disko, Greenland; 403 specimens of Mexican plants, presented by J. G. Ortega, Mazatlan, Sinaloa, Mexico; 505 specimens received in exchange from the University of California, Berkley, Calif.; 683 specimens from Texas and Mexico, received from the University of Texas as a gift, through Prof. B. C. Tharp; 375 specimens received from the New York Botanical Garden, New York City, as an exchange; 178 specimens from Guatemala presented by the Direccion General de Agricultura, Guatemala City; 355 specimens, chiefly from Alaska, received from the Bureau of Biological Survey, United States Department of Agriculture, as a transfer.

In this connection should be mentioned the receipt in March last of the 50,000 mounted specimens constituting the remaining half of the John Donnell Smith Herbarium presented to the Smithsonian Institution in 1905, but until this year retained for study in the custody of Captain Smith in Baltimore. The remainder of the John Donnell Smith library came to the Smithsonian Institution earlier in the year. The value of these collections to students of American botany can hardly be overestimated. The herbarium is notable in particular for its unique collections of Central American plants. These, with the material recently collected under the auspices of the National Museum, constitute the most extensive herbarium of Central American plants in existence.

INSTALLATION AND PRESERVATION OF COLLECTIONS

The principal change in the exhibition halls in this department was the installation of the New Rocky Mountain sheep group. The group formerly on exhibition was dismantled during the previous year, but the newly prepared animals were displayed during the summer as part of the Smithsonian exhibit at the Sesquicentennial Exposition in Philadelphia. In the fall of 1926 this material was returned to the museum and the work of constructing the rocks to serve as accessories and background for the new group began. As a result of much careful labor on the part of W. L. Brown, who designed and executed the group, and his associates, the bighorn group takes its place among the largest and most successful of our more recent biological exhibits. The whole back of the large case that contains it represents a section of a mountain side, with ledges, on which stand an old ram and three younger males. The group constitutes a worthy companion to the Rocky Mountain goat case installed two years ago.

The case containing the baboons and related African monkeys has had added several recently mounted specimens. All the specimens in the case have been reinstalled and several of the older, poorly mounted ones were removed. A young female mountain gorilla, collected by B. Burbridge, was mounted during the year and installed in the African anthropoid case.

A model of the white Chinese lake dolphin, obtained in exchange, and a skeleton of a reindeer, mounted by J. Scollick, were likewise placed on exhibition. Several other specimens were mounted but await the construction of a suitable case before being exhibited. The model of a giant squid, restored during the year, was exhibited suspended from the ceiling in the fish hall, with its companion piece the giant octopus.

More than a dozen birds required for the District of Columbia exhibit mounted during the year were labeled and added to that series. Most of these were secured by Dr. P. Bartsch, who has volunteered to oversee this part of the collection. Stereograph slides showing the home life of birds have been prepared and colored under his direction and added to the local exhibit.

The care of the scientific study material by the curatorial staff of the various divisions has progressed satisfactorily, with this reservation, that on account of lack of help, progress as a rule has been at the expense of the scientific output of the members.

In the division of mammals ten quarter unit cases were added to the storage facilities for large skulls and skeletons in the attic. Considerable progress has been made during the past year in arranging this part of the collection, the new cases being used in part for storage

of new material or for the spreading of series that were too crowded. Good progress has been made in labeling and rearranging certain groups. In order to conserve space, sets of leg bones of the larger ungulates are being removed from the regular storage cases, labeled, packed in wooden boxes, and stored in the mammal range, second floor. Practically all the available space in the attic is now occupied with cases, but the entire collection stored there still remains in a crowded condition, though at this time in much better shape than ever before. Three half-unit and five quarter-unit cases have been added for the skin collection, which is still in an overcrowded condition, although now some of the smaller groups have been given proper space. Two unit cases ordered last year, but delayed owing to work on Sesquicentennial exhibits, were delivered and have materially helped to reduce the congestion of several of the larger skin cases. Three quarter-unit cases were added to the collection of small skulls located in the office rooms. These are now in fairly good shape again, but the question of additional cases in order to prevent overcrowding is quite serious owing to lack of further space. Considerable time has been devoted during the year to further arrangement of the cetacean collection, two quarter-unit cases being added. The small skulls and small skeletons have all been placed in cases. The small cetaceans alone now occupy 61 quarter-unit cases. The specimens, case trays, and cases have all been properly labeled and a card index made of this entire collection, which is now in excellent shape. Most of the larger whale skulls and skeletons are properly arranged. A rather large amount of alcoholic porpoise material has been taken from barrels in which it was stored, labeled, and put in proper containers. Quite a number of these specimens has been used for study during the past year. A few large skins and quite a number of small ones, including some used for exhibition purposes, were tanned by the taxidermists. During the year the taxidermists prepared as study specimens some 115 flat skins and 110 made-up skins. Work on cleaning large and medium skulls and skeletons by the Museum force has resulted as follows: Skulls, 267; skeletons, 52. Contract work on small and medium-sized skulls and skeletons has resulted in the cleaning of 509 skulls and 55 skeletons.

It is gratifying to report that the various collections in the division of mammals are at this time in better shape than they have ever been heretofore.

In the division of birds, the skin collection of the family of crows (Corvidae) was expanded through the release of one half-unit case from other use. Some other minor readjustments of material were made in various parts of the collection to relieve congestion without additional case room. Twelve quarter-unit storage cases and 80

drawers were received during the year. Seven of the cases were used for eggs received from A. C. Bent, four were utillized for temporary storage purposes, and one was added to the skeleton series. The alcoholic series was further improved by incorporating part of the recent material and respacing portions of the collection on the shelves, to provide greater convenience for consulting it. A card catalogue of the collection was completed. In the skeleton series, 718 items were received from the cleaners during the year, reducing the uncleaned material on hand to a very few specimens; 517 of the cleaned specimens were placed in containers, labeled, card catalogued, and distributed in the collection. The accessions of eggs and nests were catalogued and filed away in temporary quarters. Several installments from the Bent egg collection were received and arranged, but the eggs have not been catalogued. The skin collection is in good condition, though again becoming crowded in places. Some of the material received during the year was labeled and distributed, but much of it was held out for further determination or report or labeling. Several hundred skins received at earlier periods were labeled and distributed during this year. The status of the egg collection is unchanged from last year. In alcoholics and skeletons the collections are in a very satisfactory condition indeed. The taxidermists remade or improved about 115 skins, mounted 13 birds for the local exhibit, and the preparators cleaned 718 skeltons.

In the division of reptiles more than 2,100 amphibians and reptiles have been assigned to permanent places in the storage rooms. A majority were identified by Miss Cochran, the assistant curator. The amount of old unidentified material is steadily shrinking under combined efforts to achieve an ideal of a perfect collection of identified and easily accessible specimens. Since this division has acquired eight new unit cases for the storage of skeletal and dried material it has been possible to relieve the congested condition of some of the storage cases. The assistant curator is now engaged on a complete card catalogue for the dry material like the one in use for alcoholic specimens, and has this important work about half completed. Some work has been done by the taxidermists in cleaning skulls and preparing skins. The present status of the collection is very good.

B. A. Bean, assistant curator in charge of fishes, reports that the lower floor and about one-half of the upper floors of the alcoholic storage rooms have been thoroughly inspected, shelves and containers cleaned, and the jars refilled where necessary. Many labels that had become illegible have been restored and like material from the same general locality has been wrapped and grouped together to save space and jars. The present condition of the collections is good.

In a collection growing rapidly as that in the division of insects a great deal of time is consumed in incorporating new material. Within the past year the division has received 800 insect drawers, the same as in the preceding year, which has allowed space in arranging the collections. Considerable progress has been made during the year in various groups. In the section of Diptera, Mr. Greene has arranged the extensive slide collection of gnats belonging to the family Itonididae (Cecidomyidae), not available heretofore in a satisfactory manner. The collection of immature stages of Diptera has been installed in approved manner and now ranks as probably the best in the world. In the Lepidoptera, Dr. William Schaus has made decided progress in the incorporation of the Dognin collection and has arranged and expanded the Neotropical collection in a number of groups. He has also spent considerable time in arranging and expanding the collections of Noctuidae of the Old World. Mr. Busck and Mr. Heinrich have completed the incorporation of the Microlepidoptera belonging to the Fernald collection, and have practically completed the incorporation of the exotic collection of Microlepidoptera purchased from B. Hamfelt, of Sweden. In the section of Orthoptera, Mr. Caudell has completed studies on oriental Blattidae, which necessitated the rearrangement of the collections of blattids from this region. Doctor Ewing has rearranged and brought up to date the collection of scorpions from the western United States, and has added a considerable amount of new material from the Southwest. Work on the Casey collection of Coleoptera through the continued interest of Mrs. Casey has been carried on through the year by L. L. Buchanan, who has made excellent progress. The material in the families Cerambycidae, Buprestidae, Coccinellidae, Curculionidae (except the Brazilian Barini), Melyridae, Dermestidae, Mycetophagidae, Lucanidae, Anthicidae, Alleculidae, and some others with parts of the Staphylinidae, Carabidae, Scarabaeidae, Psilaphidae, and Tenebrionidae have now been arranged so that they are available to students. These groups include about 2,500 of the Casey types. The methods employed in installation in this collection have been highly praised by specialists from other institutions who have had occasion to examine the series. In the general collection of beetles Dr. E. A. Chapin has assembled a large part of the family Cleridae and has made arrangements in certain tribes of the family Staphylinidae and part of the family Coccinellidae. Mr. Barber has arranged parts of the collection belonging to the family Lampyridae and certain other small units throughout the order. Mr. Fisher has covered parts of the family Cerambycidae and has done additional work on the members of the Buprestidae. Mr. Hyslop has devoted some time to the Elateridae and has incor-

porated the specimens from the Gorham collection, which he purchased and donated to the Museum. Mrs. Blake rearranged the genus Oedionychis of America north of Mexico. While in the section of Hymenoptera there has been little opportunity to complete research that will assist in systematizing the collections it has been possible to put a number of series in much better order.

With the adoption of the plan of mounting dissected parts on slides and keeping the slides in trays and of placing tag-mounted and slide-mounted specimens in the same tray, it has been possible to make considerable progress in arranging certain groups of chalcidoid flies and also to simplify the study of some other groups, as the bees. Following is the list of the more important units in which considerable rearrangement of material has been done during the fiscal year. Bethylidae; this entire family has been completely rearranged. The Ashmead and Museum collections have been combined into one and arranged in accordance with the system used by Kieffer in his publication in Das Tierreich. Anteonidae (Dryinidae): The entire collection of Anteonidae was rearranged in accordance with Kieffer's classification as published in Das Tierreich by Doctor Fenton when working at the Museum during the Christmas holidays. Apoidea: Miss Sandhouse has expanded the collection of Apoidea, incorporating a great deal of material which had been in the boxes of duplicates and certain other scattered through various collections. In addition, she has rearranged a number of genera as *Osmia*, exotic *Xylocopa*, North American *Halictus*, *Agapostemon*, and the tribe *Megachilini*, and has made and entered in the slide book about 500 slides of dissected parts of bees. Chalcidoidea: Mr. Gahan has continued the arrangement of chalcidoids, with particular reference to the Eulophidae and Encyrtidae. Braconidae: Mr. Gahan has revised and rearranged the oriental species of *Apanteles*. Psammocharidae; this family was rearranged by Mr. Rohwer, the regional collections broken up, and the entire series arranged in one unit. Mutillidae: the genus *Dasymutilla* and allies were partially rearranged to coincide with a manuscript by Dr. C. E. Mickel which has recently been submitted for publication. More work on this group will be necessary later.

In the division of marine invertebrates, by the employment of additional temporary help, headway has been made with the great and at one time rather alarming arrearage in replenishing the alcohol lost by evaporation from the vast study collection. The duties entailed in the sorting of incoming collections have been heavier even than in previous years on account of the greater bulk of material gathered by various expeditions.

The curator of the division of mollusks reports that progress has been made in arranging new material in the study series. The divi-

sion, however, is so shorthanded that much time of the staff is required for daily routine, requests for determinations, care of collections, and their proper intercalation in the study series. The section of corals, on account of lack of a custodian, has been more or less quiescent during the year. The only work done has been the completion of the installation of the entire coral series in the southwest hall and in room 427. The collection of helminths has been cared for as heretofore.

In the division of Echinoderms extra temporary help has been employed to replace alcohol in the containers. Further progress has been made in converting specimens from the alcoholic to the dry collections. The curator reports that the study collections are in excellent shape.

Work on the collections of the National Herbarium has progressed as usual. In the main herbarium 42,992 specimens have been entered in the record books preparatory to their being added to the general herbarium. It has been possible to insert in the herbarium only a part of this material, owing to extreme congestion, so that there are on hand awaiting distribution about 70,000 specimens. Besides these, there are about 75,000 that have been mounted, but that are not yet stamped or recorded, making a total of nearly 150,000 specimens to be inserted in the herbarium. Fortunately, the projected balcony in the western end of the herbarium hall is to be constructed within the next few months. This, with installation of new cases, will allow ample opportunity for expansion, and it is hoped that during the coming year the stamping and recording just mentioned will have been added to the herbarium. The shifting of old cases and the installation of new ones will involve a complete rearrangement of all the specimens in the phanerogamic herbarium. There remain to be mounted at the present time only about 25,000 specimens, these chiefly Old World plants.

Work in the herbarium has progressed as satisfactorily as other duties and the crowded condition of the material would permit. Doctor Maxon has identified and distributed a large number of ferns and Mr. Standley has performed like services in the case of Mexican and Central American phanerogams, which have been received in great quantity. Similar work has been accomplished by Mr. Killip and Mr. Leonard for South American and West Indian material, respectively.

The segregation of type specimens of phanerogams has been continued by Mr. Killip, 12,964 such types having now been distinctively labelled and specially catalogued with complete data. These constitute the so-called "type herbarium" kept apart from the main herbarium.

Aside from curatorial work on the moss herbarium by Mr. Leonard, the condition of the cryptogamic collections remains the same as last year, since it is not feasible, owing to lack of special curatorial help, to incorporate the large accumulation of many years past. The cryptogamic herbaria are of sufficient importance to merit the same attention that is given to the flowering plants and ferns, and it is urgently recommended that there be appointed an aid whose first duty shall be to give general curatorial attention to the cryptogamic herbaria.

Exceptionally good progress has been made in the mounting of plants during the past year, mainly through the employment of extra help. During the year 18,730 specimens of flowering plants and ferns have been glued; 18,855 glued specimens have been strapped, 13,955 of these by contract; and 23,617 specimens have been mounted wholly by adhesive plaster, 18,870 of this number by contract. The total number of specimens mounted during the year is thus upward of 40,000, which is nearly twice the number mounted during the previous year. As mentioned elsewhere, there remain unmounted about 25,000 specimens. These are chiefly Old World plants, but include also the recent Colombian collections of Messrs. Killip and Smith. The work of stamping and recording the specimens is greatly in arrears and demands immediate attention in order to clear up the accumulation of about 75,000 unstamped and unrecorded specimens and permit the insertion of this material in the herbarium.

The work of the taxidermists and preparators in so far as it relates to the exhibition series has already been mentioned. The usual work of the shops in mounting, renovating, degreasing, and repairing specimens, in addition to the regular work of cleaning skeletons, skulls, and other skeletal parts has progressed satisfactorily. The dismounting of the Burchell's zebra mentioned in last year's report was a difficult and time-consuming task successfully accomplished by George Marshall, who also made over 114 defective field skins of birds and skinned and mounted a large number of birds and mammals. Mr. Scollick and Mr. East cleaned 399 bird skeletons, 191 mammal skulls, 5 mammal skeletons, 1 fish skeleton, and 40 skeletons of reptiles and amphibians, in addition to other work. C. E. Mirguet was chiefly occupied in making plaster casts of anatomical parts and of reptiles for the exhibition series. He also restored and mounted the large model of the giant squid now on exhibition in the fish hall. Much of his time was taken up with the cleaning of 34 large mammal skeletons, 31 mammal skulls, and some reptile skeletons. Much work in skinning and curing large mammals fell to the lot of the taxidermists after the return of the Smithsonian-Chrysler expedition to Africa, since the increase in the collections of the animals at the National

Zoological Park, with the usual annual mortality, brought many specimens from this source. The taxidermists are handicapped in their work through lack of space and deserve great credit for a large amount of excellent work done under adverse conditions.

INVESTIGATION AND RESEARCH

Research for the benefit of the Museum.—In addition to research work of the scientific staff of the Museum, a vast amount of work is done for the benefit of the Museum by scientists not officers of the institution, in most cases where no specialist is represented on our staff.

Gerrit S. Miller, jr., curator of mammals, has completed final revision of a monograph of the American bats of the genus *Myotis*, on which he has been engaged for several years in collaboration with Dr. Glover M. Allen, of Cambridge, Mass. The manuscript is now in the printer's hands. He has also finished and published a study of some fossil Mongolian mammals and has made some progress in working up a collection of bones that he made in cave deposits in Haiti two years ago. A. B. Howell, collaborator, has worked up most of the Chinese mammals collected by Arthur de C. Sowerby and D. C. Graham and has continued his studies of mammalian anatomy.

Robert Ridgway, curator of birds, reports that his work on Bulletin 50 (Birds of North and Middle America) has been of the same character as reported for the previous year, the compilation of synonymy, preparation of diagnoses, keys, and descriptions of the higher groups, those for the family *Anatidae* (ducks, geese, and swans) having been included in the work for the present year. Dr. C. W. Richmond, associate curator, in the scant time allowed him from routine, curatorial, and office work, finished a paper on "Generic names applied to birds during the years 1916 to 1922, inclusive, with additions to Waterhouse's Index Generum Avium," and has also prepared several short papers dealing with nomenclature. The work on the projected catalogue of types of birds in the Museum collection in preparation jointly with B. H. Swales, honorary assistant curator, progressed slowly. The report on the birds of the Island of Haiti planned by the same investigators has now been taken up by Dr. Alexander Wetmore in association with Mr. Swales. Doctor Wetmore also made various studies of fossil birds of North America, partly to identify new material and partly to examine into the validity of forms previously described. He completed an account of the birds of Porto Rico and the Virgin Islands and undertook to complete the work, A Monograph of the Accipitres, left unfinished by the late H. Kirke Swann, and made some progress to this end. J. H.

Riley, aid, continued his studies of the Chinese collections of birds, particularly the one formed by the Rev. D. C. Graham, and began a report on the birds of the Mentawi Islands, based on material in part presented by Dr. W. L. Abbott and in part submitted by the Raffles Museum, of Singapore.

Lack of material from certain critical localities has made progress on the monograph of the turtles of North and Middle America slow, so that the curator of reptiles, Leonhard Stejneger, has devoted his time to the study of Chinese herpetology based on the rich material received during the last few years from D. C. Graham, A. de C. Sowerby, and other sources. Miss D. M. Cochran, assistant curator, continued and nearly completed a study of the collections of Siamese reptiles and amphibians made by Dr. Hugh M. Smith.

The report on the Philippine fishes undertaken by H. W. Fowler, assisted by B. A. Bean, assistant curator, progressed satisfactorily, one volume going to press and the manuscript of the second volume being submitted. Work on the third volume is well advanced.

Dr. J. M. Aldrich, associate curator of insects, continued studies of the older types of American muscoid flies in the Vienna Museum of Natural History through material forwarded from Vienna for the purpose. An article covering some 30 additional species is now in press. He also continued work on the taxonomy of the Diptera in the course of which several papers were prepared, the principal one being on the genus *Belvosia*. C. T. Greene, assistant custodian of Diptera, has completed a study of the larvae and pupae of flies belonging to the family Trypetidae. Dr. A. G. Böving has continued his researches on the classification of the larvae of Coleoptera, and during the year has extended and revised a manuscript dealing with the larvae in the Museum collection belonging to the subfamily Halticinae. He has prepared also a review of the larvae belonging to the families Mylabridae and Anobiidae, and has made notes and drawings of all the scarabaeid larvae in the collection belonging to the subfamily Dynastinae. In addition he has published papers on the immature stages of various species.

W. S. Fisher has devoted much time to a revision of the North American Buprestid beetles of the genus *Agrilus*, has completed a study of the Buprestidae of the West Indies, and has begun an investigation of the Cerambycids of the West Indies. In addition, he has continued to study the Buprestids and Cerambycids from the oriental region forwarded by Prof. C. F. Baker and has described many species. Dr. E. A. Chapin has begun an extensive revision of the Cleridae of the Nearctic region, an investigation that will be continued throughout the coming year. He has also done considerable work on the classification of the Coccinellidae and has prepared a

synopsis of the species belonging to the tribe Telsimiini, has completed a revision of the North American species of the genus *Ptilodactyla*, and has conducted minor investigation on various units in the family Staphylinidae. H. G. Barber has continued his investigations on the taxonomy of beetles of the family Lampyridae and has been able to correlate certain minor structural differences with differences in flight, flashing habits, and habitat. Mrs. Blake has completed a study of the beetles of the genus *Oedionychis*, which occur in America north of Mexico, and has described many new forms in connection with a revisionary paper which was published in the Proceedings of the Museum. Dr. F. H. Chittenden has completed a review of the North American nut weevils belonging to the genus *Curculio* (*Balaninus*), and has described a number of new forms. He has also completed investigations on the genus *Phyllotreta* and has published a revisionary synopsis, including the descriptions of many new species. A. Busck has continued his studies on the classification of the North American Microlepidoptera belonging to the family Tortricidae and allies, and has completed a review on this subject, for which illustrations are being prepared. C. Heinrich has continued investigations on Microlepidoptera and has devoted much study to classification of the larvæ. During the year he has spent a considerable portion of his time in the field. Dr. W. Schaus has done important research in connection with the identification of material from the oriental region submitted by Dr. C. F. Baker, and material from Africa and the Neotropical region, and has prepared descriptions of many new species. A. N. Caudell has continued investigations on the taxonomy of cockroaches, and has completed a report on material collected in the Fiji Islands.

Dr. H. G. Ewing has continued work on the relationship of various genera of Mallophaga and has prepared one or two papers describing unusual forms. He has also spent considerable time studying mites injurious to vegetation, especially those groups which are found on bulbs, and has continued work in the literature of mites. W. L. McAtee and J. R. Malloch have been occupied with investigations on the classification of bugs of the subfamily Thyreocorinae, and Mr. McAtee has worked with leaf hoppers of the tribe Eupterygini, especially those belonging to the neotropical region. As mentioned in the last report, Dr. H. H. Knight was employed by the Bureau of Entomology to conduct investigations on bugs of the family Miridae. He worked for the first two months of the fiscal year, completing the arrangement of the insects belonging to this family. H. G. Barber, during a detail of six weeks for the Bureau of Entomology, arranged part of the neotropical collection of bugs belonging to the family Reduviidae. Both Mr. Rohwer and Mr. Gahan have had to devote much time to administrative work or routine identification and have

had little opportunity to conduct research work except that incidental to identification. R. A. Cushman has continued identification work and has also had opportunity to study ichneumon flies of the subfamily Tryphoninae and to continue his researches on the tribe Ichneumonini. In addition he has practically completed a review of the tribe Mesostenini and a review of the oriental and Malayan species of the genus Xanthopimpla. Miss Grace Sandhouse had opportunity to do research on certain groups of bees, in which she spent considerable time studying the genus *Osmia* to complete a revision of the North American species of this group, made some preliminary studies on the tribe Megachilini, and undertook the classification of the bees of the family Halictidae. Work on the Halictidae has progressed satisfactorily, especially as concerns the genus *Agapostemon* as it occurs in North America.

In the division of marine invertebrates, Dr. Mary J. Rathbun, associate in zoology, has continued work on the third volume of her monograph on American crabs. Her report on a collection of "Brachyuran crabs from Australia and New Guinea" was published in the Records of the Australian Museum; that on "The fossil stalk-eyed Crustacea of the Pacific slope of North America" as Bulletin 138 of the United States National Museum; and her "Crustacea" of "The fauna of the Ripley formation on Cook Creek, Tenn.," in the report on that fauna by Bruce Wade, as United States Geological Survey Professional Paper 137. Current identifications of numerous small collections of recent and fossil crabs have occupied a considerable amount of Miss Rathbun's time, in addition to the service she has rendered as editor of the section of Crustacea of Biological Abstracts, both in an editorial and abstracting capacity. The curator, Dr. Waldo L. Schmitt, spent the greater part of the year in the field as the Walter Rathbone Bacon scholar of the Smithsonian Institution. Though his field work has consumed more time than originally contemplated, this has permitted examination of a greater range of territory than would have been possible otherwise. The assistant curator, Clarence R. Shoemaker, who during Doctor Schmitt's absence took over the curatorial duties of the division in a most satisfactory manner, was left little time for scientific work. Nevertheless, work was continued on the Amphipods collected during the fisheries research project of the Biological Board of Canada in the Gulf of St. Lawrence during 1917. James O. Maloney, aid, in addition to undertaking numerous identifications for the Federal Horticultural Board, made a report on the isopods obtained by the *Albatross* Lower California expedition of 1911. Part 3 of the Rotifer Fauna of Wisconsin; A Revision of the Genera Lecane and Monostyla, was published during the year by

H. K. Harring, custodian of the Rotatoria, in collaboration with Frank J. Myers. Part 4, The Dicranophorinae, was completed during the year and is now in press. The study of the rotifers of Mount Desert Island was continued and some time spent in making collections in the State of New Jersey. In addition, Mr. Harring has edited the section dealing with the Rotatoria, Gastrotricha, and Chaetognatha for Biological Abstracts. Determinations also have been made of a number of small collections for the Canadian game and fisheries service and for the museum of the University of Michigan. Dr. Max Ellis, collaborator, is working on the extensive collections of discodrilids that he has personally collected on several transcontinental automobile tours. Dr. Maynard H. Metcalf, collaborator, has continued his studies on the opalinid parasites of South American frogs.

In the division of mollusks Dr. W. H. Dall completed a paper upon the small shells dredged by the U. S. fisheries steamer *Albatross* between 1885 and 1886 in east American waters. He likewise prepared descriptions of miscellaneous species for publication in the proceedings. The curator, Dr. Paul Bartsch, has about completed a paper on the Philippine Naninidae; also a monograph on the West Indian land shells of the family Annulariidae. These two efforts have occupied all the time available for research. William B. Marshall, assistant curator, has identified specimens submitted by correspondents and distributed material into the study series. He has partially revised the foreign shells of the genera *Bulimulus*, *Bulimus* and *Bithynia*, and has prepared a paper on "A new genus and two new species of South American fresh-water mussels," which has been published by the Museum. He also prepared and submitted for publication papers on "New mollusks of the genus *Corbicula* from Uruguay and Brazil" and on "The Australian land shell *Thersites bipartita* and its allies."

The research work undertaken by the curator of Echinoderms, Austin H. Clark, during the year consisted mainly in a continuation of work on another part of his monograph of the recent crinoids. In addition, he began studies on the crinoids collected by the Australasian Antarctic expedition of 1910–1914, which were sent through the kindness of Sir Douglas Mawson, of the University, Adelaide, South Australia, and Prof. Clement Vaney, of the Université de Lyon, Lyon, France. All of the species represented in this collection have been identified.

Dr. Frederick V. Coville, curator of plants, has continued his studies upon the breeding and culture of blueberries (*Vaccinium*) and other acid-soil plants. Dr. J. N. Rose, associate curator, has continued studies of the leguminous families Caesalpiniaceae and the Mimosaceae jointly with Dr. N. L. Britton, director of the New York

Botanical Garden, with the object of preparing a monograph of the North American species. As heretofore, he has given much time to the Cactaceae and Crassulaceae groups, which he had previously treated monographically. Dr. William R. Maxon, associate curator, following his last trip of exploration in Jamaica, has begun the preparation of manuscript for a volume upon the ferns of that island. Mr. Paul C. Standley, associate curator, has given particular attention to the identification of Costa Rican material collected by himself and has published several papers describing new species from these exceedingly rich collections. At the request of the Field Museum of Natural History, he is engaged in preparing an enumeration of the plants of the Yucatan Peninsula, based largely upon the collections of Dr. G. F. Gaumer. E. C. Leonard, aid, has continued his studies of the West Indian flora, particularly the plants of Hispaniola, and has begun an investigation of the family Acanthaceae as represented in tropical America. E. P. Killip, aid, spent six months in field work in Colombia in connection with his study of the flora of that country, and at other times has given special attention to identifying specimens from the South American Andes, particularly the families Passifloraceae, Urticaceae, and Boraginaceae.

James L. Peters, of the Museum of Comparative Zoology, kindly determined a series of pigeon hawks for the Museum; Dr. C. E. Hellmayr, of the Field Museum of Natural History, revised the identifications of various skins of Asiatic and tropical American birds; Donald R. Dickey, Pasadena, Calif., did the same for a number of Central American specimens; Dr. H. C. Oberholser identified various birds in the Abbott Malayan collections and revised determinations of certain North American birds in the Museum. Mr. Remington Kellogg, Bureau of Biological Survey, has been engaged upon a study of the amphibians of Mexico, doing a large amount of exceedingly valuable work in verifying the old Museum records of specimens collected about the middle of last century, as well as identifying a considerable amount of later material. The division of reptiles is also indebted to various specialists for identifications, as Dr. Frank H. Blanchard, Percy Viosca, jr., Dr. Afranio do Amaral, Dr. E. R. Dunn, Dr. A. H. Wright, and J. W. Bailey. Prof. P. L. Lesne, of the Paris Museum, kindly determined certain beetles belonging to the family Lyctidae. The arrangement of the collection of beetles of the family Mordellidae has been greatly improved by assistance rendered by Emil Liljeblad, of the Field Museum, in making identifications. R. W. Dawson, University of Minnesota, has cooperated in the identification of certain scarabaeid beetles introduced into the United States. Dr. J. Gilbert Arrow, British Museum of Natural History, on request, has rendered similar valuable

assistance in identifying beetles recently established in the United States. Dr. Alex. Petrunkevitch, Yale University, has kindly cooperated in the identification of certain exotic spiders which have been received for determination, and Dr. Ralph V. Chamberlain, University of Utah, has similarly identified a number of lots of Myriapoda sent him. The curator of the division of marine invertebrates writes that no small part of the credit for the successful working of the division is due to the very important unofficial staff of collaborators who have kindly assisted by identifying material. The list includes the following: Dr. Henry B. Bigelow (Medusae, Ctenophora); Dr. H. Boschma (Rhizocephalids, Crustacea); Dr. R. V. Chamberlain (Annelids and Gephyrea); Dr. Henri Coutière (Crangonidae, Crustacea); Dr. Joseph A. Cushman (Foraminifera); M. W. de Laubenfels (Porifera); Prof. G. S. Dodds (Fresh-water Entomostraca); Prof. Max Ellis (Discodrilids); Dr. A. G. Huntsman (Ascidians); Dr. Chancey Juday (Cladocera, Crustacea); Mr. Frits Johansen (Fresh-water Entomostraca); Mr. T. Kaburaki (Turbellaria); Dr. C. Dwight Marsh (Fresh-water Copepods); Dr. Maynard M. Metcalf (Salpa, Pyrosoma, Protozoa); Dr. J. Percy Moore (Leeches); Dr. Charles C. Nutting (Hydroids); Dr. Raymond C. Osborn (Bryozoa); Dr. Henry A. Pilsbry (Barnacles); Capt. F. A. Potts (Rhizocephalids, Crustacea); Prof. Frank Smith (Earthworms, fresh-water sponges); Miss Caroline E. Stringer (Turbellaria); Dr. W. M. Tattersall (Mysidacea, Crustacea); Dr. A. L. Treadwell (Annelids); Dr. C. B. Wilson (Parasitic and free-swimming marine Copepods); Dr. H. V. Wilson (Porifera). The generous assistance rendered by the Scripps Institute for Biological Research in determining the salinity of 18 water samples obtained by Dr. Waldo L. Schmitt in the course of his studies on the South American macruran fauna deserves special acknowledgment.

The generous assistance accorded the curator of mollusks by Charles T. Simpson, of Little River, Fla., alluded to in last year's report, was continued during the year. Acknowledgment is made to Prof. T. D. A. Cockerell, University of Colorado, for the identification of some slugs; also to Miss Phoebe Knappen, Cornell University, for the dissection of Cerions.

Prof. Walter K. Fisher, Stanford University, continued work on the starfishes of the North Pacific in connection with the preparation of the second part of the monograph on the Asteroidea of the North Pacific which is now well on the road to completion. Dr. Hubert Lyman Clark, of the Museum of Comparative Zoölogy, continued study of the holothurians of the *Albatross* Philippine expedition.

The division of plants acknowledges assistance received from Dr. S. F. Blake, who identified and revised a large number of speci-

mens, mainly Compositae, from South America and the western United States. The loan of undetermined herbarium material to specialists in or out of Washington is usually of benefit to the Museum when returned with critical identifications. Names of specialists who have rendered such service will be found mentioned later.

Research of outside investigators aided by Museum material.—The facilities for research afforded investigators, not members of the official staff of the Museum, have been utilized by a large number of students who have either come to the Museum to examine series of specimens of critical species and types of described forms or have borrowed specimens to supplement that at their disposition elsewhere. Many are the investigators who will testify to the impossibility of bringing their studies to a satisfying conclusion without the aid afforded by the national collections.

The collection of mammals has been consulted frequently by Drs. Adolph H. Schultz, Ernst Huber, and George P. Wislocki of Johns Hopkins Medical School, Baltimore. Miss Tagert, secretary to Childs Frick, of the American Museum of Natural History, spent several days in the division taking measurements of the skulls of zebras and certain antelopes. Dr. Dorothy H. Anderson, School of Medicine and Dentistry, Rochester, N. Y., studied certain points of the anatomy of a number of mammals that could only be obtained in this Museum. Dr. O. P. Hay, of the Carnegie Institute of Washington, has made constant use of the osteological collection in connection with his work on fossil mammals. The members of the United States Biological Survey have had constant access to the collections. Mr. Donald Dickey compared specimens of Central American mammals. Dr. Paul B. Johnson, of Washington, dissected many of the mammals sent to the taxidermist shop from the Zoological Park, and gave valuable assistance in preparing specimens of soft parts for preservation in the study series.

Miss Mary E. Laing, of California, spent much of the time between January 6 and May 22, 1927, studying various North American birds and consulting publications in the sectional library while preparing two popular books on the subject. Miss Mary E. McClellan, assistant curator of ornithology and mammalogy at the California Academy of Sciences, spent two weeks or more examining western United States birds for California records, comparing certain Mexican birds, and looking up other data. Mr. Donald R. Dickey, of Pasadena, Calif., spent several days studying and comparing Central American birds, with a view to determining a series of birds from Salvador. A. C. Bent, Taunton, Mass., spent three days at the end of March studying North American shore birds and their eggs in connection with his work on the life histories of North American birds of this

group. Prof. E. H. Forbush, Boston, Mass., examined woodpeckers, cuckoos, kingfishers, and flycatchers in connection with his work on the birds of Massachusetts. W. W. Bowen, New York City, examined African weaver birds of the genus *Lagonosticta* and starlings of the genus *Cinnyricinclus*, and on another visit examined the North African species of sand grouse. Herbert W. Brandt, Cleveland, Ohio, studied various Alaskan birds and eggs. Dr. George Finlay Simmons, of the same place, examined certain African species. Charles M. B. Cadwalader, Port Washington, Pa., examined species of teal and widgeon from North America and Europe; Dr. Walter Koelz, of Michigan, studied gyrfalcons, longspurs, and other species from northern America. J. R. Pemberton, Beverly Hills, Calif., inspected certain eggs in the North American series, and Ernest G. Holt, Montgomery, Ala., examined martins of the genus *Progne*.

Mr. Remington Kellogg, of the United States Biological Survey, has had a table in the division of reptiles for the continuation of his work on Museum amphibians, and a similar privilege was extended toward the end of the year to Dr. Hugh M. Smith for his Siamese studies. Various distinguished herpetologists have visited the division at intervals, examining material bearing on their investigations, among them Dr. Frank N. Blanchard, Percy Viosca, jr., Dr. E. R. Dunn, Dr. A. H. Wright, and J. W. Bailey.

The collections in the division of fishes were visited by a number of specialists examining material in connection with their scientific work, namely, Dr. Carl L. Hubbs, Museum of Zoology, University of Michigan; W. C. Kendall and S. F. Hildebrand, of the United States Bureau of Fisheries; and H. W. Fowler, Academy of Natural Sciences, Philadelphia.

In the division of insects the officials of the Bureau of Entomology had constant access to the collections, R. A. St. George, S. E. Crumb, E. V. Walter, and Dr. J. W. Folsam being especially mentioned as having spent considerable time there. A large number of other entomologists made use of its facilities throughout visits which often extended over a considerable time. Dr. H. Prell, of Dresden, Germany, spent some time in the division; H. C. Fall, Tyngsboro, Mass., during two trips to Washington was materially aided by the study of types of species described by the late Colonel Casey, and later published notes on some of the species; C. H. Curran, entomological branch, Department of Agriculture, Ottawa, Canada, spent two weeks in the Museum in the study of muscoid flies; Dr. Karl Jordan, of Tring Museum, England, for about a month studied types of fleas in the collection, in completing a comprehensive monograph of the fleas of the world; Dr. J. M. Swaine, Ottawa, Canada, with his coworker, Ralph Hopping, spent about 10 days studying the collection

and examined type specimens in the Casey collection; Frank Mason, of Philadelphia, was occupied for a day with the Cerambycids in the same collection; Dr. Foster H. Benjamin, Decatur, Ill., has been aided in his investigations by study of types in the collection of Lepidoptera; Dr. H. B. Hungerford, of the University of Kansas, spent some time examining types chiefly in connection with his report on aquatic Hemiptera collected for the Museum by the Mulford Biological Expedition; Dr. E. D. Ball, of Sanford, Fla., spent some time at the Museum on two different occasions studying types of leaf hoppers; Dr. H. L. Dozier, Newark, Del., was materially aided in his investigations on Hemiptera by examining specimens; Dr. J. B. Parker, of Catholic University, Washington, D. C., has continued studies on the wasps of the subfamily Bembecinae, averaging more than one day a week at the Museum, and has completed a synoptic review of the genera with descriptions of new species; Robert M. Fouts, Washington, D. C., has continued to use the collection in studying parasites belonging to the superfamily Serphoidea; C. Howard Curran, in charge of Diptera in the National Museum of Canada, at Ottawa, spent two weeks in Washington studying the collection of muscoid flies; E. T. Creeson, jr., Philadelphia, spent a day at the Museum studying Diptera; Dr. William A. Hoffman, School of Tropical Medicine, Porto Rico, spent some time at the Museum in the study of bloodsucking diptera; Dr. A. Avinoff, director of the Carnegie Museum, Pittsburgh, was aided in his investigations by study of material; Melville B. Grosvenor, of the editorial staff of the National Geographic Magazine, was aided in obtaining photographs of butterflies and moths to illustrate an article which appeared recently in that publication, two photographers of the staff of the National Geographic Society working for several weeks under the direction of the custodian, Dr. H. G. Dyar, and obtaining material for 16 plates in full color; J. E. Walters, of the Federal Horticultural Board, has continued to work on the Thysanoptera.

Among the visitors of the division of marine invertebrates during the year are the following: Dr. J. A. Cushman, specialist on Foraminifera; M. W. de Laubenfels, who spent some time consulting literature and examining Pacific sponges; Dr. Charles J. Fish, director of the Buffalo Museum of Natural History and specialist on marine plankton; Gordon E. Gates, of Rangoon, Burma, specialist on earthworms; Dr. C. Dwight Marsh, specialist on fresh-water Copepods; Drs. Stillman Wright and Arthur Willey, who have recently described a number of fresh-water copepods and presented the types to the National Museum; Dr. Deogracias V. Villadolid, professor of zoology, College of Agriculture, University of the Philippines, who is particularly interested in the Philippine marine life; Dr. Arata

Terao, professor of zoology in the Imperial Fisheries Institute, Tokyo, an ardent student of crustaceans; and Dr. C. B. Wilson, specialist in parasitic and free-swimming marine Copepods. Dr. H. C. Kellers, United States Navy, paid a visit to the division before sailing for Nicaragua, where he expects to secure further collections for the Museum. Capt. Robert A. Bartlett, who recently returned from the Putnam Greenland expedition and donated a number of specimens to the national collections, also visited the division before joining the second Putnam expedition in Baffin Land. Laboratory facilities were afforded Dr. Theodore Mortensen and Miss Elizabeth Deichmann, for study of collections in the division of Echinoderms.

The collection of recent mollusks have been freely consulted by Drs. Wendell C. Mansfield, W. P. Woodring, C. W. Cooke, and Julia Gardner, members of the staff of the Geological Survey, who have had constant use of specimens for comparative purposes. Miss Harriett Bundick is continuing on the Philippine Epitoniidae; Mrs. Mary Quick Bowman has finished dissecting 100 hybrid Cerions for Doctor Bartsch; Miss Elizabeth Parker is working on a correlation of the shell with the radula of the family Neritidae; Miss Lucy Reardon has completed her anatomic studies of certain fresh-water mussels; while Messrs. Irving Erschler, John Borelli, Samuel Koronefsky, and Miss Blanche Cullen have been working on radula of West Indian and Philippine mollusks.

The following individuals have spent varying lengths of time, ranging from a few hours to weeks in the division of mollusks, examining and studying material; Dr. Rollin H. Stevens, Detroit, Mich.; Mr. and Mrs. Lewis B. Stillwell, Princeton, N. J.; Mrs. Howard Roberts Bliss, Long Island, N. Y.; Frederick Morris Reed, Riverside, Calif.; Charles H. Brodin, Detroit, Mich.; Dr. Thomas L. Southworth, New York City; Curtis A. Perry, Bridgeport, Conn.; Mrs. Albert Willis and her sister, Louisville, Ky.; James Gutsell, Beaufort, N. C.; William G. Mazyck, Charleston, S. C.; Mrs. L. M. Perry, Asheville, N. C.; Wellington Martin and Dr. Sylvia B. Martin, Lake Hopatcong, N. J.; and Mr. and Mrs. R. D. Everhart, Norfolk, Va.

Dr. Th. Mortensen, of the Zoological Museum, Copenhagen, Danmark, spent a month in the division of Echinoderms, studying sea urchins of the family Cidaridae in connection with the preparation of a monograph on the Echinoidea on which he is now engaged; Dr. Elizabeth Deichmann, of Copenhagen, spent a week at the Museum in work on the holothurians.

Among the many out-of-town botanists who have visited the National Herbarium in connection with special studies are the following, with mention of their projects: Prof. B. C. Tharp, University of Texas (vegetation of Texas); Prof. H. M. Hall, University of California (Compositae of the western United States); Dr. F. W.

Pennell, Academy of Natural Sciences of Philadelphia (Scrophulariaceae of South America); Carl Epling, University of California, southern branch (plants of the Northwestern States); Dr. Frank D. Kern, Pennsylvania State College (rusts of West Indian plants); E. B. Bartram, Bushkill, Pa. (mosses of the southwestern United States); Prof. Le Roy Abrams, Stanford University (several families of plants in connection with the preparation of manuscript for volume 2 of the Illustrated Flora of the Pacific Coast); Dr. M. O. Malte, National Herbarium of Canada, Ottawa (grasses of Canada); Albert W. Steward, University of Nanking (flora of China, especially grasses); Dr. Ryozo Kanehira, Government Research Institute, Formosa (flora of the South American Andes); Dr. John Briquet, director of the Delessert Herbarium and of the Botanical Garden, Geneva, Switzerland (grasses and herbarium management); Lyman B. Smith, Gray Herbarium of Harvard University (tropical American Bromeliaceae); C. W. Powell, Balboa, Canal Zone (orchids); Prof. Harold St. John, Washington State College (certain groups of North American aquatic plants); T. A. Sprague, Royal Botanic Gardens, Kew (tropical American species of Dilleniaceae); Dr. J. K. Small, New York Botanical Garden (flora of the southeastern United States); and W. E. Manning, Cornell University (Juglandaceae).

Much material, in many instances large collections, has been sent out to investigators not residing in Washington to assist in their researches. The importance of this service may be seen from the following list, which embraces the more important loans sent out. From the division of mammals to the Western Reserve University, school of medicine, anatomical laboratory, 2 complete gorilla skeletons for use by Dr. W. L. Straus, jr., in a study of the differences between the skeletons of the mountain and plain gorillas; Colorado Museum of Natural History, Denver, 4 skulls of Virginia deer; University of Pittsburgh, 1 beaver skull and a young beaver in alcohol; American Museum of Natural History, New York, alcoholic bats for examination of the stomach contents by Dr. G. G. Goodwin, and the pelvic bones of a whale for study by Dr. F. A. Lucas; Museum of Vertebrate Zoology, Berkeley, Calif., 542 specimens of weasels for E. Raymond Hall; Museum of Comparative Zoology, for G. M. Allen, 4 bats for study in connection with a monograph of the American species of *Myotis*, and 1 Chinese rabbit; British Museum of Natural History, London, a skin and skull of *Marmosa impavida* for study by Oldfield Thomas. Institutions and individuals borrowed a total of 393 specimens of birds during the year, as follows: The American Museum of Natural History, for Dr. Frank M. Chapman and W. W. Bowen; British Museum of Natural History, for W. L. Sclater; Carnegie Museum, Pittsburgh, for W. E. Clyde Todd; Field

Museum of Natural History, Chicago, 56 specimens of birds to assist Dr. C. E. Hellmayr in studies of Asiatic and South American birds, and 15 skins of parrots and warblers from the Isle of Pines and Swan Island for Pierce Brodkorb; Museum of Comparative Zoology, 31 skins for Outram Bangs and James L. Peters; Museum of Vertebrate Zoology, Berkeley, skulls and sterna of fox sparrows for Jean Linsdale, and 12 skins for Dr. Joseph Grinnell; Raffles Museum, Singapore, 9 flycatchers of the genus *Cyornis*, for the use of C. Boden Klose; University of Kansas Museum of Birds and Mammals, 27 skeletons of woodpeckers for the use of W. H. Burt; Zoological Museum, Tring, England, 2 blood pheasants *Ithaginis rocki* from China, to enable Lord Rothschild to make comparisons with a related species; Donald R. Dickey, Pasadena, Calif.; Dr. E. L. Furlong, University of California; Ira N. Gabrielson, Portland, Oreg.; Arthur T. Wayne, Mount Pleasant, S. C. Specimens of reptiles and amphibians were borrowed by Miss Olive Griffith Stull, Northampton, Mass.; Dr. Thomas Barbour and J. W. Bailey, Museum of Comparative Zoology, Cambridge, Mass.; Dr. T. D. A. Cockerell, University of Colorado; C. E. Burt, Manhatten, Kans.; Dr. E. R. Dunn, Northampton, Mass.; Dr. F. N. Blanchard, Ann Arbor, Mich.; L. M. Klauber, San Diego, Calif.; and Dr. A. do Amaral, Glenolden, Pa. A specimen of *Raia granulata* was loaned to W. C. Schroeder, United States Bureau of Fisheries.

Entomological material was loaned to a large number of institutions and investigators to aid in their studies. There has been very little call for the loan of marine invertebrates this year, only two having been made to the New York Zoological Society. Dr. H. A. Pilsbry, Academy of Natural Sciences of Philadelphia, and Dr. Frank C. Baker, University of Illinois, borrowed some mollusks. Holothurians of the family Psolidae were sent to the Museum of Comparative Zoölogy for study by Miss Deichmann. Some specimens of the starfish *Ctenodiscus procurator* were sent to Copenhagen for study by Mr. Ingvald Lieberkind in connection with his work on this genus. Five specimens of the sand dollar (*Echinarachnius parma*) from Alaska and a number of sea urchins were sent to Dr. Th. Mortensen for detailed study in connection with material in the Zoological Museum at Copenhagen. Two four-rayed sea urchins were sent to Prof. Robert T. Jackson for study in connection with his work on abnormal echinoids.

The researches of many outside investigators have been facilitated by the loan of mounted specimens from the National Herbarium. Thus, 45 lots of material, aggregating 1,251 specimens, have been lent during the year to 13 investigators in the Department of Agriculture, chiefly in the Bureau of Plant Industry. The material lent for

study to institutions or to individuals outside of Washington consists of 98 lots aggregating 6,693 specimens. The more important sendings are as follows: University of California, 1,166 specimens; Edwin B. Bartram, Bushkill, Pa., 805 specimens; Gray Herbarium, Harvard University, 788 specimens; University of Illinois, 741 specimens; G. K. Merrill, Rockland, Me., 620 specimens; Botanical Garden and Museum, Berlin-Dahlem, Germany, 613 specimens of *Meibomia;* University of Wyoming, 467 specimens of *Oreocarya;* New York Botanical Garden, 355 specimens; Missouri Botanical Garden, 174 specimens; Royal Botanic Gardens, Kew, England, 130 specimens; University of Montreal, Canada, 126 specimens of *Botrychium.*

ASSISTANCE BY MEMBERS OF STAFF TO OTHER GOVERNMENT BUREAUS AND PRIVATE INDIVIDUALS

Under this heading there was given in last year's report a summary of the multifarious questions and problems submitted to the staff for answer and solution, which constitute a considerable part of the service rendered to the public in general as well as to several important Government branches, and which occupied no small portion of the time of the force. Many of these inquiries are of considerable importance and demand the closest attention. Others while apparently trivial, yet may cause time-consuming search for reply both circumstantial and courteous. The following is a brief summary of some of the more important.

In the division of mammals in addition to assistance rendered to outsiders doing research work there and the usual miscellaneous inquiries detailed reports were made on a total of 30 lots, including about 140 specimens in all. In the division of birds, information and other cooperation was given to the members of the Biological Survey who had occasion to prosecute work in the division; some identifications were furnished the National Zoological Park and the Bureau of Standards; specimens were identified for the Zoological Museum, University of Michigan, Ann Arbor; Kent Scientific Museum, Grand Rapids, Mich.; California Academy of Sciences, San Francisco; Museum of Vertebrate Zoology, Berkeley, Calif.; Everhart Museum, Scranton, Pa. Bone material, fossil or recent, was determined for the Natural History Museum, San Diego, Calif.; American Museum of Natural History, New York; Colorado Museum of Natural History, Denver. Other assistance was given to individuals as to A. C. Bent on the manuscript of one volume and proof of another of his "Life histories of North American birds"; G. M. Mathews on proof of part 1 of the Systema Avium dealing with the birds of the East Indies, Australia, and the Pacific Islands;

R. C. McGregor on the nomenclature of a manuscript relating to a group of Philippine birds; 16 or more lots of birds and bones from as many institutions and individuals were received and reported on during the year. In the division of reptiles, Miss Cochran has identified a number of lizards and frogs taken by the Federal Horticultural Board at points of entry for foreign plants. A considerable number of letters from individuals relating to herpetological matters have been answered and written reports made on many separate lots of material received for identification. Assistance by members of the staff of the division of fishes has been rendered to various members of the staff of the Bureau of Fisheries in the identification of material; and a number of lots of fishes received from the International Health Board, New York City, were named and a duplicate series returned. These were, for the most part, fishes which feed on the larvae of insects injurious to health. Eighteen lots of fishes were received for determination, mostly of minor importance.

The principal work of the division of insects as at present organized is the identification of material for the Bureau of Entomology. As indicative of this work during the year there have been received for report by the section of Hymenoptera 508 lots, and in Diptera 1,304 lots. A great deal of the material above referred to comes from other bureaus, as the Federal Horticultural Board, as well as experiment stations scattered throughout the country. The work is of necessity largely handled through the staff of the Bureau of Entomology. The division has identified much material for institutions and individual entomologists.

There have been numerous calls from other Government bureaus for information and determinations of animals falling within the scope of the division of marine invertebrates. By far the greatest demand upon the division has been by the Federal Horticultural Board for the identification of invertebrates found on plant importations. Twenty-two lots, comprising 112 specimens, were named for the board. Similar services have been rendered the Bureau of Fisheries, the United States Department of Commerce, the Bureau of Biological Survey, the Bureau of Entomology, the United States Department of Agriculture, and the United States Geological Survey. For other museums, scientific and related institutions, numerous identifications were made directly or were arranged through the many specialists with whom the division is in constant touch. Assistance was also rendered in the shape of reports prepared on collections submitted for determination. During the past year assistance was likewise rendered to the American Museum of Natural History, New York City; the Australian Museum, Sydney, Australia; and the Museo Paulista, Sao Paulo, Brazil. Considerable assistance

was given to university students and professors with regard to research and thesis work, either in the form of pertinent references or information, or, as more often is the case, by furnishing authoritative identifications of the material upon which their studies are based. A detailed account of these activities would fill several pages. For private individuals and firms 24 lots, including 322 specimens, have been determined. The number of lots of material received for identification during the year totals 117, necessitating more than 1,500 identifications.

The division of Mollusks has determined for the Federal Horticultural Board 29 lots of various organisms which have adventitiously been imported with plant stock to indicate whether these were dangerous to agricultural pursuits. In all, 1,429 lots of material have been received for identification. The assistance rendered by the curator of Echinoderms to outside organizations and individuals, beyond the usual correspondence, consisted in identifying 52 lots of material received for that purpose during the year.

A large number of inquiries has come concerning herbarium management and such matters as plant distribution, the selection of helpful botanical literature and the economic uses of plants, but the great majority handled relate to the identification of botanical material, some shipments containing hundreds or even thousands of specimens. In accordance with the traditional policy and spirit of the Institution, every effort is made to accede promptly to all requests for assistance. In particular the work of identification has grown steadily in recent years. During the year just closed a total of 300 lots of plants consisting of 14,107 specimens were examined, the identifications in all cases being furnished to the senders. The material thus reported upon was chiefly American, and came not only from private individuals, but from various governmental and educational agencies in the West Indies, Mexico, Central America, South America, and Europe, as also from several State experiment stations and bureaus in the Department of Agriculture. Special mention should be made of one large lot of Mexican and Central American flowering plants collected long ago by Liebman and Oersted, which was forwarded by the Botanical Museum of Copenhagen for identification, and of several lots, chiefly Central American trees, received similarly from the Yale School of Forestry. These collections contained many species new not only to the National Herbarium but to science. Further help has been extended by Mr. Standley in furnishing abstracts of botanical papers for publication in Botanical Abstracts, and by Dr. J. N. Rose in testifying as an expert for the Government in an important lawsuit.

VISITS TO OTHER INSTITUTIONS OR PLACES ON OFFICIAL WORK

Large collections of mollusks and other marine invertebrates from the eastern Atlantic north of Cape Hatteras, originally gathered by the United States Commission of Fisheries and since transferred to the Museum, had been intrusted to the custody of Prof. A. E. Verrill of the Peabody Museum, Yale University, for report. In 1907, that portion which had been identified up to that time was shipped to the Museum, the rest remaining at the Peabody Museum in Professor Verrill's care. After his death on December 10, 1926, the Museum was informed by the authorities of Yale University that the collections, which in the meanwhile had been moved several times into different buildings, were at its disposal. Dr. J. E. Benedict, assistant curator, who packed and invoiced the collections in 1907, was, therefore, sent to New Haven where he spent five days in searching out the material belonging to the National Museum and packing what could be found. Since his return to Washington he has checked systematically the material received with the records, a slow and difficult task which is still unfinished. Lack of funds for the purpose have prevented travel by Museum employees for the purpose of attending scientific meetings or visiting other museums or libraries for the purpose of studying specimens, literature or methods, except at personal or other outside expense. It goes without saying that under such circumstances presonal contact between the staff and specialists of other institutions has been more restricted than is desirable.

The curator of mammals, Gerrit S. Miller, spent two days at the American Museum of Natural History and one at the Museum of Comparative Zoology. Dr. A. Wetmore and Dr. C. W. Richmond visited the National Museum of Canada in Ottawa during October and examined fossil and modern bird material there on the occasion of the annual meeting of the American Ornithologists' Union. Doctor Wetmore also spent some time in the ornithological library at McGill University in Montreal. B. A. Bean, assistant curator of fishes, visited the Academy of Sciences in Philadelphia upon several occasions to confer with Dr. H. W. Fowler upon the report on the fishes of the Philippine Islands. During one of these visits he assisted Doctor Fowler in selecting specimens from Hawaii and neighboring islands mentioned under the year's accessions. Dr. Paul Bartsch was detailed to serve as expert witness in a case against the United States Shipping Board for losses sustained in the shipment of a cargo of mahogany timber from Africa to Boston. W. L. Brown and C. R. Aschemeier, of the taxidermist force, visited New York during the autumn for the purpose of studying technique for making rockwork accessories in connection with the group of

Rocky Mountain sheep, noted elsewhere in this report. From July 8 to 10, 1926, Austin H. Clark, curator of echinoderms, attended a meeting in Denver of the advisory committee on source bed studies of the American Petroleum Institute, acting in cooperation with the National Research Council. From December 26, 1926, to January 1, 1927, he was in Philadelphia attending the meetings of the American Association for the Advancement of Science as an official delegate from the Smithsonian Institution and also as news manager for the association. Mrs. Agnes Chase, associate botanist in the grass herbarium, spent about two months in Europe studying the type specimens of certain American grasses in the herbaria at Berlin, Paris, Geneva, and Vienna. Dr. J. N. Rose, associate curator of plants, spent several weeks in studying leguminous plants at the Gray Herbarium and the New York Botanical Garden, in connection with joint monographic work with Dr. N. L. Britton, previously mentioned. A number of the honorary custodians, members of the staff of the Bureau of Entomology, visited various institutions on work directly beneficial to the Museum as follows: Dr. E. A. Chapin visited the collections of the Academy of Natural Sciences in Philadelphia and the American Museum of Natural History, New York, comparing specimens with the types housed in these institutions. H. S. Barber went to Mount Vernon, N. Y., at the expense of the Bureau of Entomology, and brought back to Washington the extensive collection of water beetles given to the Museum by John D. Sherman, jr. In the month of June Doctor Chapin went to Springfield, Mass., to arrange for the packing and shipping of the insect collection of Dr. George Dimmock. Doctor Dimmock had expressed a desire to deposit in the National Museum his extensive collection of adult and immature stages with his notes on their rearing. This collection will come to the Museum early in the next fiscal year. A. N. Caudell, Dr. H. E. Ewing, S. A. Rohwer, and Dr. J. M. Aldrich attended the meetings of the American Association for the Advancement of Science which were held in Philadelphia. During the year S. A. Rohwer examined types in the Academy of Natural History, and Mr. Cushman spent a week in Philadelphia comparing specimens of ichneumon flies with the Cresson and Davis types in the Academy of Natural Sciences.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

Duplicates distributed to high schools, colleges, and other similar institutions aggregated 1,137 specimens, of which 596 consisted of mollusks in four prepared sets, and 219 of fishes, also in four sets.

Exchanges to the number of 23,363 were sent out, of which 1,232 were zoological specimens. Of the 22,131 plants thus distributed,

exchanges comprising lots of 1,000 specimens and over were sent to the Arnold Arboretum, Gray Herbarium, New York Botanical Garden, and the Natural History Museum at Vienna, Austria; the others were distributed to 126 correspondents and institutions.

NUMBER OF SPECIMENS UNDER THE DEPARTMENT OF BIOLOGY

The number of specimens, including duplicates, as far as it has been ascertained by count and subsequent estimate, or by estimate alone, now exceeds 7,700,000. The total number is probably much greater, since several collections, such as the corals, have not been included in the estimates, nor does the number of plants given below include unmounted material or the lower cryptogams.

Division:		Estimated number of specimens
Mammals		82,773
Birds—		
Skins	231,988	
Alcoholics	7,974	
Skeletons	9,341	
Eggs	81,391	
		330,694
Reptiles and amphibians		82,571
Fishes		695,639
Insects		2,698,692
Marine invertebrates		763,119
Helminths		35,687
Mollusks		1,588,021
Echinoderms		151,916
Plants		1,298,440
Total		7,727,552

REPORT ON THE DEPARTMENT OF GEOLOGY

By George P. Merrill, *Head Curator*

The year has been one of unprecedented activity and prosperity in this department. This is due mainly to the acquisition of two large mineral collections with accompanying endowments, noted later, a collection made by Dr. W. F. Foshag in Mexico, and important additions to the paleontological collections obtained mainly through efforts of members of the staff.

Exploratory work was largely cooperative, or undertaken at personal expense, but was highly beneficial not only to the collections, but in establishing relations with active workers elsewhere, and in presenting an opportunity to study field prospects, collections, and museums.

ACCESSIONS

Although the number of accessions is less, the total of specimens and their value are overwhelmingly greater than last year when 221 accessions with a total of 45,895 specimens were recorded. The accessions of the present year are tabulated below:

	Accessions	Specimens
Geology, systematic and applied	51	670
Mineralogy and petrology	48	26,000
Stratigraphic paleontology	75	150,000
Vertebrate paleontology	34	111
Total	208	176,781

Of primary importance are the Washington A. Roebling and Frederick A. Canfield mineral collections. The first mentioned, the gift of Mr. John A. Roebling, placed in the Museum one of the best known and most complete private collections of minerals in existence. Comprised of approximately 16,000 specimens it embraces almost the entire number of known mineral species, and contains much valuable material for exhibition. It is in its completeness, however, that its scientific value lies, and it is a distinct gratification that Mr. Roebling recognized the benefit to science in placing these rare specimens in the National Museum, where after their final installation they will be accessible to all accredited students. Mr.

Roebling further provided for keeping the collection up to its present standard by an endowment of $150,000, through which several unusual specimens already have been added to both exhibition and study series. From a fund previously deposited by Colonel Roebling several exceptional specimens were secured, notably one of purpurite and some rare Franklin Furnace minerals.

On July 27, 1926, notification was received of the bequest to the Institution by Frederick A. Canfield, of Dover, N. J., of his mineral collection of upward of 9,000 specimens, with an endowment of $50,000. Although this collection had long been known to our curators, the bequest came as a pleasing surprise, no intimation having been received that Mr. Canfield had considered the Smithsonian as a depository. The collection is notable for its fine examples of Franklin Furnace, N. J., minerals, although containing also series of Bolivian silver compounds, complete suites of various rare minerals from localities now unavailable, and which are now therefore almost priceless, and many rare and beautiful showy specimens for exhibition purposes. The collection had been completely catalogued by Mr. Canfield, and the beauty and value of many of the specimens have been emphasized by the long hours spent by him in removing the matrix from the crystal groups.

In cooperation with Harvard University, Dr. W. F. Foshag, during a summer's field work, was enabled to secure an exceptionally fine lot of minerals and ores from the mining regions of northern Mexico. Groups and clusters of mammoth gypsum crystals from caves in Naica are the outstanding exhibition minerals of this collection. These are supplemented by wulfenites, pyromorphites, descloizites, pyrrhotites, spurrites—some of exceptional quality—and series of ores representative of the mines visited.

The existing series of radium ores and radioactive minerals was materially increased by the transfer of materials purchased for the Sesquicentennial Exposition in Philadelphia. Varieties of the ores from the Belgian Congo are worthy of especial note. The national collections are now exceptionally rich in these interesting minerals.

Incidental to the head curator's visit to Europe during the summer of 1926, an unusual opportunity was offered to secure many objects of interest for the gem collection, through the Chamberlain fund. These included carved objects and cut gems of which particular mention should be made of two beryls, one pink (morganite) and one green-yellow ("heliodor"); a kunzite from Madagascar; a peridot; beads of the different varieties of quartz; and a series of synthetic rubies and sapphires. The carved objects are of lapis-lazuli, serpentine, agate, and others. Of other acquisitions through the Chamberlain fund, the most important are two Brazilian diamond crystals in the matrix, estimated to weigh 6 and 7 carats. A

yellow sapphire weighing 25 carats; three cut gems, beryl, phenacite, and tourmaline; a natural crystal and a cut stone of yellow spodumene; a small pink diamond; and two strings of beads of Baltic amber with three polished pieces of the fluorescent Sicilian amber, are all worthy of note.

Individual gifts to the gem collection comprise a series of Brazilian gem minerals in rough and cut form, presented by Capt. Hugh Barclay, military attaché at Rio Janeiro, and 24 cut tourmalines from Maine, selected to show variety of color, donated by Dr. W. B. Moulton, of Portland.

The chief source of material to the division of systematic and applied geology was as usual the United States Geological Survey, nine sets of rocks and ores illustrative of published reports being among the transfers. Of exhibition value are white crystalline masses of cerussite, one weighing upward of 40 pounds, donated by the West Toledo Mining Co., of Alta, Utah, through Victor C. Heikes, to whom we are constanly indebted for his watchfulness in securing valuable material which is brought to his notice. A 410-pound mass of sphalerite coated with chalcopyrite crystals, and a mass of crystallized galena, both from the Crutchfield mine, north of Joplin, Mo., were presented by F. Sansom, of Joplin.

Through arrangements made by the head curator while in Europe, the Geological Survey of the Union of South Africa presented a series of ores with associated rocks and minerals from the new South African platinum deposits; and the Geological Survey of Great Britain, a series illustrating the geology of the island of Mull and a mass of English chalk with its included flints.

Additions to the meteorite collection have been large in point of numbers owing to the acquisition of those of the Canfield and Roebling collections, and though to a considerable extent duplicating what we already have, are in several cases worthy of note. Of primary importance are two complete individual irons weighing, respectively, 111,360 and 305,450 grams, from Oakley, Idaho, and the Wallapai Indian Reservation of Arizona, both credited to the Roebling fund. It was through the kindly intervention of Supt. William A. Light, of the agency, and Indian Commissioner Charles A. Burke that the latter was secured. A 21,250-gram iron from Bolivia in the Canfield collection should be noted and in the Roebling collection were the following: A 250-gram slice of the Ensisheim, Upper Alsace, stone of 1492; two excellent slices of the Staunton, Va., iron, weighing 912, and 2,200 grams, each containing large sections of nodular troilite and carbon; two slices of the Wichita, Tex., iron, weighing 612 and 13,700 grams; a fairly complete individual stone, weighing 900 grams of the Homestead fall; and others

from various sources, weighing from 5 to 1,000 grams. Through exchanges there were obtained an 86-gram slice of the stone of Supuhee, India; a beautifully complete example of the Hessle, Sweden, fall, weighing 282 grams; and a 1,405-gram portion, representing approximately one-half of a stone seen to fall during the past year near Florence, Williamson County, Tex. The total number of individual additions has been 35, of which 9 are new to the collection.

A collection of Mesozoic and Cenozoic fossils containing approximately 100,000 specimens, presented by Ferdinand Canu, of Versailles, France, constitutes the most important accession of the year in the division of stratigraphic paleontology. This material is of value in that it contains, in addition to a large series of accurately labeled French fossils, quantities of washings with microfossils from many classic localities of western Europe, and a great number of European post-Paleozoic corals which hitherto have been represented in the National Museum by a very few species. The division has been fortunate also in securing, through personal efforts of members of the staff, other important collections from widely separated foreign countries.

Collections made in the field by members of the staff of the division were as follows: Dr. R. S. Bassler collected over 5,000 specimens in Germany and France; C. E. Resser and Erwin Pohl secured 800 from Devonian and Carboniferous, 500 from the Canadian, and 5,000 from the Cambrian rocks of Utah and Montana; and Mr. Pohl, in the course of field work in western New York and Ontario, obtained approximately 15,000 Middle and Upper Devonian invertebrates and plants.

In the course of her studies of the higher Crustacea, Dr. Mary Rathbun examined all important collections from the Pacific slope of North America, and from these obtained for the Museum numerous types and other studied material. Twelve accessions record donations by Stanford University, the California Academy of Sciences, Peabody Museum of Yale University, University of Washington, University of Oregon, and others. Additional material which has added appreciably to the value of the collections consists of Carboniferous Ostracoda and Foraminifera, from Oklahoma, presented by Bruce H. Harlton, of Tulsa; and Devonian forms from Iowa described and presented by C. H. Belanski, Nora Springs, Iowa.

Gifts by E. H. Vaupel and an exchange with C. O. Schlemmer, both of Cincinnati, added about 1,500 excellently preserved Silurian fossils from a newly discovered locality in southwestern Ohio. Mention may also be made of Carboniferous fossils from Missouri, presented by Frank T. Ransom, Greenwood, Mo.; a large slab illustrat-

ing the Ordovician-Devonian unconformity in Alabama, by Dr. Walter B. Jones, University of Alabama; Middle Cambrian and Lower Ordovician fossils from Utah, by Frank Beckwith, Delta, Utah; and small but important collections from the Cambrian of New York and Missouri, presented respectively by Dr. A. F. Foerste, Dayton, Ohio, and Prof. Josiah Bridge, Rolla, Mo.

Transfers from the United States Geological Survey comprise Cambrian fossils from Utah and the Grand Canyon, Ariz., and 72 described specimens of echinoderms and mollusks from North and South Carolina.

Of the eleven exchanges received by this division, the most noteworthy was that from Williams College, comprising 1,060 invertebrates from the Devonian of Wisconsin, and including many types and original drawings. From Ward's Natural Science Establishment were obtained 5,000 fossils from various European Paleozoic and Mesozoic formations, many microfossils from the Eocene of southern Germany, 250 invertebrates from the Warsaw and Knobstone groups of Indiana, and a Jurassic ammonite from Wyoming. From the New York State Museum was acquired a large collection of European Foraminifera and Ostracoda, valuable for consultation and study. Purchases were limited to a single specimen, a fossil squid of great rarity from Kansas.

The accessions in paleobotany include 137 Mesozoic and Cenozoic plants from Sweden, forwarded as the first of a proposed series of exchanges whereby the National Museum will receive post-Paleozoic plants from Europe and Asia now under study at the Riksmuseum at Stockholm. A large exhibition slab of the primitive fossil plant *Cryptozoon*, obtained and presented by E. O. Ulrich and H. D. Miser, should also be mentioned.

Of first importance among the accessions of fossil vertebrates is the material exhibited at the Sesquicentennial Exposition, consisting of fish, turtle, and lizard skeletal remains from the Niobrara Upper Cretaceous chalk of western Kansas. Especially noteworthy are the nearly complete skeleton of a large fish (*Portheus molossus*) 12 feet in length and of unique interest in having the partially digested skeleton of a smaller fish within the abdominal cavity; three large marine turtles (*Protostega gigas*) with a painted restoration; and two skeletons of the marine lizard *Platecarpus coryphaeus*, which sufficiently supplement one another as to make feasible their combination into a single mount. Additional material from the same locality, acquired by purchase, gives to the Museum a very adequate representation of this interesting marine fauna.

By far the most important mammalian material acquired is a partial skeleton of a large mammoth, the bones of which were uncovered during the course of excavations by the Venice Co. of Florida,

who assumed practically all the expense of recovery. The preserved parts include nearly complete lower jaws, both upper molars, parts of both tusks, and sufficient number of foot and toe bones to restore a fore and hind foot, and other fragmentary pieces.

Interesting phytosaurian remains from the Triassic were received through the generosity of N. H. Brown, of Lander, Wyo., and W. W. McPherson, Lubbock, Tex.; Dr. C. N. Fenner, of the Carnegie Institution of Washington, presented a reptile found in New Jersey which proves to be a form new to science; and G. F. Sternberg donated remains of *Hesperornis* and *Ichthyornis*, both among the rarest of fossil birds.

Other materials deemed worthy of mention are Pleistocene fossils from Alaska secured by Dr. A. Hrdlička; a lower jaw of a new species of marten from the Miocene of Montana, gift of C. A. Kinsey; casts of the lower jaws of the mastodon *Trilophodon angustidens*, the original of which is in the museum at Lyon, France, and of the type of *Thescelosaurus warreni*, a Canadian dinosaur, furnished by the American Museum of Natural History; and fine skulls of fossil horses from Alaska, received from Martin Matusuka and the United States Geological Survey.

INSTALLATION AND PRESERVATION OF COLLECTIONS

Changes in the exhibition halls were mainly incidental to the proper display of newly acquired materials or the introduction of exhibits prepared for the Sesquicentennial Exposition, and the Smithsonian conference of February, 1927. In the mineral hall, a specially built case provided with electric lighting contains the finer examples of polished opals and the cut gems of the Roebling collection, one flat-top case contains a number of the finer mineral specimens, and on either side of this, one side of each of the upright cases has been utilized to display miscellaneous minerals selected for their coloring and unique form, thus forming an alcove devoted entirely to the Roebling collection. Under the window on a pedestal is an unusual group of California tourmalines. The famous 12¾-inch crystal ball loaned by the Fukushima Co. of New York forms here a centerpiece of unrivaled beauty.

It was hoped that a similar exhibit of the Canfield collection could be installed, but in the absence of the curator and with the small force available, this has been found as yet impossible. Such exhibition will be arranged at as early a date as is practicable.

In a small Kensington case which was available has been placed a temporary exhibit of some of the gypsum crystals secured in Mexico by Doctor Foshag.

The exhibit at the Sesquicentennial Exposition at Philadelphia, showing the characteristic coal measures plants of Pennsylvania

which contributed to the making of the coal beds, proved of general interest and upon its return was incorporated into the regular paleobotanical series. Similarly the fossil seaweeds from the pre-Cambrian rocks of the Western States, illustrating the earliest known forms of life, and the unique fossil animals of Middle Cambrian time discovered by Secretary Walcott at Burgess Pass, British Columbia, were also added to the permanent series, as were three of the exhibits prepared for the Smithsonian conference on February 11, 1927.

With the installation in the Museum of the vertebrate fossils exhibited in Philadelphia, all of the more important representatives of the Niobrara fauna of the Upper Cretaceous period are now contained in our series. A 12-foot skeleton of a fish (*Portheus molossus* Cope) and a giant marine turtle (*Protostega gigas* Cope) are shown as bas reliefs, the latter accompanied by a painted restoration by R. Bruce Horsfall which gives an idea of the appearance in life of the animal. A second specimen of the same species is temporarily installed, the bones being effectively displayed in an articulated position in sand. This will eventually be made into an open mount. An articulated skeleton of the extinct swimming reptile, *Platecarpus coryphaeus* Cope, is also shown.

Of the mammoth from Venice, Fla., sufficient restorations have been made to warrant their being placed in a wall case in the main exhibition hall.

Exhibits illustrating the activities of all divisions of the department were prepared for inspection by those attending the Smithsonian conference on February 11. The division of geology presented an illustration of the phenomena of fall and different varieties of meteorites; a series illustrating the weathering of rocks and formation of soil; and a series illustrating the chemical processes involved in the formation and oxidation of metallic ore deposits. The assistant curator of mineralogy chose a study in mineral genesis, selecting the California pegmatites to illustrate his problem. The curator of stratigraphic paleontology prepared four exhibits—(1) the oil shale problem, (2) the evolution of plant life, (3) the study of microorganisms from core and churn drillings, and (4) the progress in studies of Cambrian geology. Vertebrate paleontology was represented by two exhibits, one illustrating several phases of paleontological work, especially the collecting, preparing, and restoring of large dinosaurian fossils; the other showed some of the results of paleontological field work in Florida, particularly in its relation to the occurrence of fossil human remains.

The main activities of the entire force during the year were centered in the laboratories and workrooms. The packing and unpacking of the large collections previously noted made heavy

drafts upon our resources, particularly as much shifting was necessary in order to make space for the great amount of expansion involved. In the course of this, some 7,000 lots of metallic ores turned over by the United States Geological Survey in 1925 were gone over and about 1,000 specimens selected for permanent preservation. These were set aside to await cataloguing. Likewise the collections made in Bolivia by F. L. Hess in 1920 were sorted and a representative set selected and trimmed.

The packing of the Canfield collection at Dover required the services of Messrs. Shannon and Benn, with local assistants, for a period of four weeks, and that of the Roebling collection at Trenton, of Messrs. Foshag and Benn and Miss Moodey for six weeks. The resultant 373 packing boxes holding the combined collections were brought to Washington by motor trucks and all safely housed by December 8, 1926.

In the work of unpacking here in Washington, the collections made in Mexico by Doctor Foshag were given first attention in order to bring to a conclusion the cooperative agreement with Prof. Charles Palache, of Harvard University. This was completed early in January of the present year. Work upon the Roebling collection was begun almost immediately and practically finished by March 28. Some weeks were then devoted to a selection of some of the more showy materials for exhibition, their cataloguing, labeling, and installation. On May 16 work on the Canfield collection was begun and completed about June 1. The materials of these three collections are now stored in drawers awaiting systematizing, cataloguing, and arrangement with the Museum collections, a work which, with the present force and the constant interruption of the ever-present routine, will require some years.

The study series of both fossil plants and animals have required an unusual amount of time and effort this year. In the section of paleobotany this was concentrated on the Mesozoic and Cenozoic collections for many years under the custodianship of Dr. F. H. Knowlton, whose death necessitated certain changes in their general arrangement. The accumulations of unstudied material in the room formerly occupied by him have been removed and this will in future be utilized for the housing of valuable types.

Additional new storage cases have filled all the space in the loft allotted to the paleontological division, and a new arrangement of the stratigraphic series of fossil animals is now in progress. Only a beginning has been made on this move which will involve the transfer of four or five thousand drawers, so that another year will be required to complete the changes contemplated.

The Cambrian collections have occupied the entire time of Doctor Resser, who has evolved a system of arrangement which ought to

care for them for many years. The collections held by Secretary Walcott in the Smithsonian Building were transferred so far as accommodations permitted; his library also was removed and temporarily arranged in the Cambrian section of the division, and his field notes assembled and classified.

Following the appearance of his latest monograph on fossil crinoids, Dr. Frank Springer planned with the curator for the final arrangement of his extensive collection. This, the largest assemblage of fossil echinoderms known, is now concentrated in about 1,250 standard drawers in regular order of classification and with sufficient room for expansion.

The Cenozoic collections, long under the custodianship of the late Dr. W. H. Dall, have, since his death, been placed under the immediate direction of Dr. Paul Bartsch. The assistance furnished by W. C. Mansfield, Dr. W. P. Woodring, and others of the United States Geological Survey in caring for these collections is acknowledged. It is only by their efforts that the materials received within the past year have been properly cared for.

Dr. T. W. Stanton and others of the United States Geological Survey, have continued, as in the past, the care of the Mesozoic invertebrates.

In the laboratory of vertebrate paleontology, the energies of the force have been devoted, with slight interruptions, to the preparation of the *Diplodocus* skeleton. This work, after three years, can now be reported as practically finished. To our great disappointment, the neck, which was thought to belong to the same genus, proves to be that of an allied form and can not be used in the composite skeleton. The preparation of this cervical series has been continued, however, and it is estimated that within six months all of the collection from the Dinosaur National Monument will be entirely prepared.

Doctor Gidley reports the complete preparation of collections made in Florida and Oklahoma, and some progress on the arrangement of the older mammalian collections. Work still remains to be done on the latter, but it can not be carried much further until more storage space is available.

Mr. Remington Kellogg, of the Biological Survey, has been of great assistance in the systematic arrangement of the cetacean collection. Here, too, the arrangement could be improved if storage facilities were more commodious.

INVESTIGATION AND RESEARCH

Research by members of the staff.—Research by the head curator was limited, in part by his absence in Europe and in part by the extra work involved by the acquisition of the Canfield and Roebling

collections mentioned elsewhere. Studies have been made on two iron meteorites from the Canfield collection, one from Seneca Township, Mich., and one from Oakley, Idaho. A newly received 672-pound iron from the Wallapai Indian Reservation is now undergoing investigation.

Mr. Shannon reports that research in the chemical laboratory was continued throughout the year. A paper on the minerals of Italian Mountain, Colo., was submitted during the year, and others on the determination of alkalies in minerals, and on apatite from Maryland are in process of publication. Several manuscripts partially completed are now in hand.

Research by Doctor Foshag has been confined to the material collected in Mexico. His field notes and collections will form the basis of three reports, one of which is almost completed and another well advanced.

Until a few days before his death, Secretary Walcott was actively engaged upon his monograph on the stratigraphy of the Cambrian and associated rocks of the Rocky Mountains. The completion of this work has been assigned to Dr. Charles E. Resser, and it is hoped that doubtful points will be solved during the coming field season. Progress has been made on most of the research problems noted in previous reports upon which Doctor Resser is engaged.

Curator R. S. Bassler has been unable to devote much time to research but in collaboration with Ferdinand Canu he has transmitted for publication a detailed account of the Bryozoa of the Gulf of Mexico region, based on numerous dredgings made in years past by the *Albatross*, and on a Pliocene fauna from Panama.

Mr. Pohl has concentrated on a study of the Wisconsin Devonian collection, which is unique in that exposures of these rocks are no longer available and the National Museum has the most complete set known.

Mr. Gilmore reports the completion of a short paper descriptive of some well-preserved specimens of *Terrapene* from the Pleistocene of Florida, the preparation of a second paper on fossil footprints from the Grand Canyon, and a partially prepared manuscript descriptive of a new reptile from the Triassic of New Jersey.

Doctor Gidley has continued research on the Pleistocene faunas of the Cumberland Cave, Md., and those of Florida and Oklahoma, with special attention to the Proboscidea and Edentata. A paper descriptive of the Camelidae of the San Pedro Valley, Ariz., Pliocene deposits is in preparation.

Research of outside investigators aided by Museum material, including work in the Museum or material loaned.—Materials for research have been supplied to many of the scientific bureaus located

in Washington, to various universities, and to private individuals both in this country and abroad. A total of 4,068 specimens have been sent out within the year. The collections in all branches of the department have as usual been accessible to accredited students, but extended research has been confined to the paleontological divisions.

Ira Edwards, curator of geology in the Milwaukee Public Museum, was again detailed for four months to study the Wisconsin Cambrian brachiopods of our collections; Prof. B. F. Howell, of Princeton University, was occupied in research work in connection with a monograph of the trilobite family Agnostidae; and Dr. A. F. Foerste, who regularly spends his summer vacation in a study of our Early Paleozoic collections, was occupied in this way during the summer of 1926.

Dr. R. C. Moore, State geologist of Kansas, has had frequent occasion to consult the collections during his studies of the major geosynclines of North America, a project of the American Petroleum Institute in cooperation with the National Research Council.

Dr. I. Hayasaki, of Tohoku Imperial University, has studied our Paleozoic corals, and Dr. Yoshiaki Ozawa, of the Imperial University of Tokyo, studied Carboniferous bryozoans and foraminifera. Dr. I. P. Tolmachoff, of the Carnegie Museum, studied the Paleozoic collections to further his researches on Arctic paleontology.

The stratigraphic portion of the Austin collection of Early Silurian fossils was assembled and arranged by three graduate students of George Washington University, G. R. Tush, John E. Organ, and M. W. Shepherd, each of whom studied one of the three formations of the group.

W. S. Dyer of the Geological Survey of Canada, and M. M. Knechtel, a graduate student of Johns Hopkins University, have had access to the Mesozoic collections and library while engaged in researches, and Dr. Frank M. Carpenter, of the Bussey Institute, examined the unstudied Mesozoic and Cenozoic insects and selected material for study and description. The Cenozoic and Mesozoic collections have been constantly consulted and worked upon by members of the United States Geological Survey staff who have desk room and working space in the division.

Dr. R. Florin, assistant curator of paleobotany in the Royal State Museum at Stockholm, spent some days studying our fossil plants in connection with a monograph on the Permian floras of China.

Dr. O. P. Hay and Mr. Remington Kellogg have continued their researches in the division of vertebrate paleontology, and Charles Merriam has made a study of the collections from the John Day formation of Oregon.

Assistance to other Government bureaus and individuals.—This work has continued as heretofore and consists mainly in supplying materials for investigation. No record is supplied of the number of callers to whom information has been furnished, or of letters written on official business. It can be said that at least one-fourth of the time of the heads of divisions is taken up in furnishing information either by letter, to callers, or in the examination of materials. During the year, 450 lots were received through official channels for report, and 470 letters, chiefly requests for information on various subjects, were referred to the department from the division of correspondence.

Visits to other institutions and places on official work.—The head curator was in Europe for practically the entire summer of 1926, his time being devoted at first to attendance on the Geological Congress in Madrid, and later to geological explorations on the island of Majorca, and a study of European museums. Periods of from one to several days were spent in the museums of Madrid, Paris, Vienna, Prague, Brussels, and London. Geological trips were also made into the tin mining districts of Cornwall, England, and the celebrated serpentine areas of Kynance. Two side trips were made to the gem-cutting town of Oberstein, Germany, where important additions to the Isaac Lea collection of gems were made by purchase.

Assistant Curator W. F. Foshag visited the following mineral collections: American Museum of Natural History, Philadelphia Academy of Sciences, the private collection of George Vaux at Bryn Mawr, Pa., and the public collection in the Chamber of Mines at Chihuahua City, Mexico.

In the course of his work in Europe, Doctor Bassler studied methods of installation and collections in the leading museums of Paris, Münich, Frankfort, Berlin, and London.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

The matter of distribution of specimens remains much as in previous years. Of the sets illustrating phases of rockweathering and soil formation, 27, aggregating 432 specimens, have been sent out as gifts. Additional material prepared on special requests number 867 specimens sent out as gifts; 4,008 as loans, usually for purposes of research; 8,137 specimens and 150 pounds of material as exchanges; and one lot numbering 138 specimens as a transfer to a Government bureau.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The estimated totals as given by heads of divisions are as follows:

Division	Specimens
Geology, systematic and applied	92, 630
Mineralogy and petrology	131, 123
Stratigraphic paleontology	1, 642, 779
Vertebrate paleontology	23, 723
Total	1, 890, 255

As mentioned repeatedly, these figures are necessarily estimates. An actual count of specimens of this nature is a practical impossibility.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The estimated totals as given by heads of divisions are as follows:

Division	Number
Geology, systematic and applied	92,650
Mineralogy and petrology	137,123
Stratigraphic paleontology	1,612,272
Vertebrate paleontology	22,272
Total	1,864,317

As mentioned repeatedly, these figures are necessarily estimates. An actual count of specimens of this nature is a practical impossibility.

DEPARTMENT OF ARTS AND INDUSTRIES AND DIVISION OF HISTORY

By WILLIAM DEC. RAVENEL, *Director of Arts and Industries*

The first Board of Regents of the Smithsonian Institution, in interpreting the organic act establishing the Smithsonian, included as within the scope of the Museum of the Nation, among other things, the history of the progress of useful inventions, and the collection of raw materials and products of manufactures and arts. The early development of the Museum, however, was chiefly along other lines—in the natural history, geology, ethnology, and archeology of the United States, and to a lesser degree of other countries. Greater opportunities for acquisitions in these directions were brought about through the activities of the scientific and economic surveys of the Government, many of which were the direct outgrowths of earlier explorations stimulated or directed by the Smithsonian Institution.

It was not until 1876 that opportunity was afforded for establishing a department of industrial arts on a creditable basis, and so important was the subject considered that the curatorship was given by Secretary Baird to Dr. G. Brown Goode, who as assistant secretary was in charge of the National Museum. From the Centennial Exhibition of 1876 at Philadelphia, the first of the large international expositions to be held in the United States, the National Museum obtained 100 carloads of valuable material, being a large part of the foreign exhibits in the useful arts, as well as some from domestic sources. This unusual acquisition was the immediate cause of the erection of the brick building now known as the Arts and Industries Building. The collections from the Philadelphia Exhibition with additions from other sources were sufficiently extensive to occupy the greater part of this building, when it was completed in 1881. The division of American history was also started at this time.

The first separate report of the National Museum, that for 1881, relates how the great mass of material acquired at Philadelphia, which had been stored in the Armory Building had then been brought to the Museum and stored in two of the central courts; that the collection of naval models and musical instruments and a portion of the Chinese collection were put in order and were ready for exhibition; that the materia medica collections had been assorted

and catalogued to the extent of 1,574 entries; that considerable work had been done on the collection of foods numbering 951 specimens; that large series of Japanese cottons and United States cotton fabrics, ornamental woods of Japan, 30 working models of schooners, an exhibit illustrating the process of making kid gloves, and many others, had been received.

By 1884 the building was filled with industrial art collections, historical specimens, and the overflow of natural history from the Smithsonian Building; where to store incoming collections was a serious problem leaving entirely out of consideration the question of their display. The rapidly increasing natural history collections, for which there was no room in the Smithsonian Building, encroached so constantly that a large proportion of the industrial collections had from time to time to be retired and placed in storage. The building became so overcrowded with the continued rapid growth of the collections that an orderly arrangement ceased to be possible and exhibits of natural history, of anthropology, of arts and industries, and of fine arts were more or less intermingled, unsystematically, and with little regard to relationship.

The department of arts and industries in the Museum on June 30, 1897, consisted of historical collections, religious ceremonial objects, technological collections, electrical collections, graphic arts, materia medica, forestry, physical apparatus, and photographic collections. A new plan of organization effective July 1, 1897, divided the whole Museum into three departments—anthropology, biology (zoology and botany combined), and geology (including paleontology). All collections not readily referable to biology or geology were thrown with ethnology and archeology into the new department of anthropology and included the following: Division of technology (mechanical phases) with section of electricity; division of graphic arts with section of photography; division of medicine; division of religions with section of historic religious ceremonials; and division of history and biography with section of American history. Forestry in the new classification was made a section of the division of plants in the department of biology. The organization of the collections remained thus for years.

In order to take advantage of the exceptional opportunities afforded by the Louisiana Purchase Exposition for obtaining material relating to industrial subjects, especially to the mineral industries, a department of mineral technology was nominally established in 1904 under the curatorship of Dr. Charles D. Walcott, then Director of the United States Geological Survey, though at the time no space whatever was available for display. Of the 80 carloads of exhibit material received from this exposition, some 25 carloads com-

prised natural products, models or actual examples of appliances of manufacture and finished products in various branches of the mineral industry from many parts of the world. At the time of acceptance it was understood that this material would have to go into storage until additional floor space could be secured, and it was packed in St. Louis with this plan in view.

With the completion of the Natural History Building in 1911 a new era dawned. The removal of the natural history and the fine arts collections to that building left space available for the reorganization and development of the department of arts and industries and for the display on a scale more commensurate with their importance of the methods and results of the applied arts and sciences.

In March, 1912, the division of textiles with a curator in charge was established, with custody over other vegetable and animal products not specifically provided for otherwise. This was done without disturbing the relationships of the several industrial branches which had continued to be administered under the three-department Museum organization. The division of mineral technology, which had been nominally recognized since 1904, with Dr. Charles D. Walcott as honorary curator, was given a definite status June 6, 1913, with a paid curator, and the vast accumulation of stored material from St. Louis began to be available.

With the appointment of an assistant curator, on June 11, 1915, the section of wood technology was organized tentatively under the curator of textiles. Though comprehended in the former section of forestry, very little material of public or even of technical interest had been assembled. During the fiscal year of 1916 the division of medicine, which had been without an immediate head, was likewise transferred to the care of the curator of textiles.

On November 1, 1918, William deC. Ravenel was designated by Secretary Walcott as director of arts and industries, and steps were taken looking to the more definite organization of the department.

On July 1, 1919, the division of mechanical technology was transferred from the custody of the department of anthropology to that of arts and industries. One year later the division of graphic arts was likewise placed in arts and industries, and, to facilitate administration, the division of history was separated from anthropology to become an independent division reporting directly to the administrative assistant.

Necessity for governmental economy following the World War has hindered further development in the department, the only other change in organization being the creation of a new section of organic chemistry, under the supervision of the curator of textiles in August 1922, to which were transferred the old collections of animal and vegetable products.

One privately supported collection, the Loeb collection of chemical types, has since April 1, 1924, been administered as a separate entity in the department of arts and industries. This collection, in charge of a chemist as curator, is maintained entirely through the beneficence of the late Dr. Morris Loeb.

In the general survey of Government housing conditions made by the Public Building Commission in 1917, the Museum was reported as needing immediately a building for the arts and industries and American history, with temporary accomodations for the National Gallery of Art. The decade which has since intervened has seen the art industrial collections increase greatly, while the collections of historical material have been augmented beyond all precedent. Some temporary relief as to space was secured by the occupation of the metal building erected on the Smithsonian reservation by the War Department—known as the Aircraft Building—and by the overflowing of the historical collections into the Natural History Building, where they use some 35,000 square feet of exhibition space urgently needed for the collections for which the building was designed. No space now remains for even ordinary growth, and great gifts can not be solicited with the knowledge that no place exists for their accommodation. As to the personnel very little relief has been afforded, and additional members of the scientific and preparatorial staff are urgently needed to properly care for the varied collections.

That none of the classifications for art industrial subjects proposed from time to time by the National and other museums have been strictly followed in the arrangement of the collections here is due mainly to limitations of space, resulting in a more or less disorderly distribution of subjects, the conditions leaving no other choice than that based on convenience. Work is being chiefly centered at present on those subdivisions which are most prominent in relation to current industrial affairs, but there are other subdivisions with important collections which are not represented by experts on the staff from lack of funds for their employment.

The year ending June 30, 1927, was an unusually busy one for this department and the division of history. The regular work was augmented by duties in connection with installation, maintenance, and dismantling of collections at the Sesquicentennial Exposition in Philadelphia. The customary routine was further interrupted by the Smithsonian conference which added materially to the load carried by some of the employees.

The hearty cooperation and support of the scientific and other workers has made possible the progress recorded in the following pages.

ACCESSIONS FOR THE YEAR

The department of arts and industries and the division of history acquired 14,497 specimens during the year, assigned by subjects as follows: Mechanical technology, 79; mineral technology, 112; textiles, 337; food, 206; organic chemistry, 1,195; wood technology, 1,014; medicine, 958; graphic arts, including photography, 3,238; Loeb collection of chemical types, 175; and history, 7,183. Besides the above there are some 6,000 or 7,000 additional Patent Office models to be critically gone over, classified, and catalogued before being recorded as Museum property.

Mineral and mechanical technology.—The number of accessions received in the divisions of mineral an mechanical technology for the year was 25, the number of objects in 24 of these being 191, or considerably less than one-half the number received the preceding year. Of this total, 112 objects were assigned to mineral technology and 79 to mechanical technology. Of the twenty-fifth accession, comprising Patent Office models transferred from the Department of Commerce, no official count of objects has as yet been made, though it is estimated that some 1,500 or more will be permanently retained as the property of the Museum.

Probably the most important exhibit received, in so far as concerns its educational value, is that of a series of objects presented by the Norton Co. This exhibit, as installed, shows the raw materials and steps in the manufacture of artificial abrasive wheels and indicates by finished products the great variety of refractories, special abrasives, floor tiles, and laboratory equipment produced from the same material. A beautifully made scale model of the electric furnace used to convert raw materials into abrasive stock and a photograph of the inventor are exhibited in a special case, while the manufacture of four types of abrasive wheels, namely, vitrified, silicate, rubber-bonded, and bakelite-bonded wheels, is shown in wall cases by the use of wheels in various stages of completion, together with the molding equipment used. Eight pencil sketches drawn from the company's plant show in further detail the operations of manufacture. The company cooperated with the Museum in the design of the exhibit and presented it as a complete unit ready for installation.

The Museum has been endeavoring to obtain for addition to the aircraft collections the United States Navy seaplane *NC-4* ever since its memorable flight across the Atlantic Ocean in 1919. The greatest difficulty has been the matter of size, there being no space large enough to exhibit the plane. As a last resort and with the generous assistance of the Navy Department, the hull alone was transferred during the year and is now exhibited in the Aircraft Building. In the meantime the wings, three engines (the fourth being now in

the collection), and all other parts are being held at the naval aircraft factory, Philadelphia, in the hope that eventually space will be secured here for housing the entire plane.

Of value particularly to the technical man is the accession of six airplane engines, five transferred from the naval aircraft factory, Philadelphia, and one, the very first Liberty engine produced in 1917, transferred from the Department of Commerce. The latter object, which upon its completion was sent to the Department of Commerce for tests, represents a triumph in engine production, having been completed in 27 days. Among the five engines transferred from the Navy Department are a Union engine such as is used in small dirigibles, and a Wright *D–1* six-cylinder engine which was originally intended for the ill-fated *Shenandoah*, but, due to the accident which destroyed that airship, never saw service.

Another accession of importance was that of two models of Chinese war chariots of about 500 B. C., received as a gift from the Government Historical Museum, Peking, China, through the director, Ch'iu Tzŭ-yüan. These present several unusual features, particularly in wheel construction, and materially enhance the series showing the development of the wheel.

In the section of horology three very interesting donations ware received. The first contained three early and valuable Japanese timepieces, consisting of a wall clock, a table clock, and a sundial presented by Mrs. Harold C. Ernst from the collections of her late husband. The second donation was one of the original watch movements made by the J. P. Stevens Watch Co. between 1882–1885 and presented by J. P. Stevens. This company, while in active operation but three years, holds the unique distinction of having been the only watch manufacturing company in the South. The third was an old English watch in a shagreen case, made by Peter Garon, of London, about 1690, lent by George H. James. This is the oldest representative of English watchmaking in the Museum's collection and is therefore a distinct and valuable addition.

The extensive study collection of horology was quite materially enhanced in value during the year through the addition of approximately 50 Patent Office models, including those of D. Azro Buck, the inventor of the "dollar watch," which invention is recognized the world over as America's greatest contribution to the science of horology.

Textiles, foods, organic chemistry, wood technology, and medicine.—The accessions in the subjects under the general supervision of the curator of textiles contained 3,710 specimens, which number, however does not include a large number of patent models still under examination; some of these will later be definitely added to the collec-

tions. The additions to the collections are divided into five groups, as follows: Textiles, 337; foods, 206; organic chemistry, 1,195; wood technology, 1,014; and medicine, 958.

Among the great number of models of mechanical inventions and specimens of combinations of matter brought from the storage warehouse of the Patent Office for examination and study, 314 have so far been accepted for the Museum as marking steps of progress in arts and industries. The following classes of objects have been more or less studied during the year by the curator and his assistants: Sewing machines, weaving appliances, lumbering and woodworking inventions, dental and surgical instruments, pharmaceutical appliances, artificial dyestuffs and synthetic chemicals, and agricultural implements. The models of the most important inventions in the last group were selected by R. B. Gray, of the Bureau of Public Roads, United States Department of Agriculture. In some cases, however, since the Museum can do no more than preserve and store the models until more space is available, it has loaned to educational institutions, where good use will be made of them in the meantime, desirable models which could not be exhibited at present.

From George Crompton was received the original patent model of the first power loom for weaving fancy figured fabrics, which was invented by his grandfather, William Crompton, and on which United States Patent No. 491 was issued November 25, 1837. This model, reclaimed from the Patent Office by George Crompton as the heir of the inventor, was presented to the Museum for inclusion in the collection of important original models received directly from the Patent Office.

With the exception of the Patent Office models, the most important additions to the textile collections were made by firms who had formerly cooperated in furnishing educational material. Two groups of beautiful silk dress goods printed in unique designs and representative of the highest grade of printed fabrics produced to-day were contributed by H. R. Mallinson & Co. (Inc.). These fabrics illustrate application of scientific findings to needs of a commercial industry. The first group of 14 specimens, received in August, 1926, were fabrics intended for the fall trade of 1926 and the spring of 1927. The whole series was suggestive of the sea, the motifs representing seaweeds, kelp, sea nettles, starfish, coral, flying fish, dolphins, gulls, and the like. Many of the designs were developed from original sketches made by Mrs. Helen Tee Van while on board the steam yacht *Arcturus* on the New York Zoological Society's expedition to the Sargasso Sea and the Galapagos Islands. In the second group of 28 specimens, called the National Park Series, the natural wonders of our National and State parks have supplied the motifs.

Through the courtesy of the National Park Service of the United States Department of the Interior and the Union Pacific system, photographs were obtained of the particular scenes in the parks which suggested the designs on the fabrics for installation in the case with the textiles.

Additions to their already generous contributions of textiles were also made by the Pacific Mills, S. B. & B. W. Fleisher (Inc.), and N. Erlanger, Blumgart & Co. (Inc.).

A donation from Miss Isabella C. Freeman and Mrs. H. B. Buckingham to other branches of the Museum included a series of 26 gay Roman-striped silks in the shape of scarfs and sashes in brilliant color combinations, all of foreign origin.

A portion of an Anglo-Persian Wilton rug, showing steps in its construction and the cutting of the looped pile, was contributed by the M. J. Whittall Associates.

In continuance of the effort to obtain for the Museum examples of the official standards so important nowadays in almost every line of industry, the Museum requested the transfer from the Bureau of Agricultural Economics, United States Department of Agriculture, of a set of official standards of the United States for American cotton linters. This set of seven basic grades ranges from the longest first cuts of linters to the shortest second cuts. Cotton linters are obtained preparatory to conditioning cottonseed for oil extraction by a second ginning of the seed from which the greater portion of the fiber has been removed by the ordinary cotton gin, and represent the residual short fiber remaining after the first ginning. Depending upon the grade of linters obtained, this material is used for mattresses, cushions, wadding, paper, twine, lamp wicks, and bandages, for an immense number of cellulose chemicals and varnishes, and as a source of rayon, or artificial silk.

Public interest in the several forms of artificial fibers, now generally know as rayon, has made the gift of specimens of celanese by the American Cellulose & Chemical Manufacturing Co. (Ltd.) especially acceptable for exhibition in the collections. Celanese is the trade-mark name for an artificial fiber of cellulose acetate made from cotton linters. It differs in chemical composition and properties from the other forms of rayon, particularly in its behavior to dyestuffs. The usual basic coal-tar dyes, which readily dye silk and wool, do not affect it; and its behavior with dyes which color cotton is different despite its manufacture from cotton linters. Special dyes have been discovered, however, which will dye celanese without dyeing cotton, silk, or wool. This makes it possible to obtain beautiful color effects in textiles by weaving combination fabrics which can be cross dyed, or dyed in one operation, and overcomes

the necessity of weaving the fabric with previously dyed yarns. The series of specimens contributed includes celanese yarn in skeins and on bobbins, knitted and woven plain undyed fabrics, dyed, printed, and figured fabrics, examples of celanese and cotton woven together to illustrate cross dyeing, and many specimens of the special dyes developed for use with celanese.

Four interesting and beautiful specimens of Javanese batik were presented by Mrs. Charles D. Walcott for exhibition. The designs show various mythological personages venerated in Java and are quite different from those already on exhibition in the Museum. The batik process consists essentially in tracing on the prepared cloth a design by means of a fine stream of melted beeswax and filling in the design with a film of wax, so as to protect the cloth from the action of the dye where the color is not wanted.

Mrs. Laura M. Allen, expert weaver and instructor of weaving, added 38 examples of hand weaving done by seven persons to the collection previously assembled by her and presented to the Museum.

To Capt. George W. Swartz the Museum is indebted for an interesting addition to the collection of old textile machinery, in the form of a hand-operated machine which gins, cards, and spins cotton, receiving the seed cotton as it is picked, and delivering a good quality of spun yarn wound upon bobbins. This old machine was made by J. & T. Pearce, Cincinnati, Ohio, about 1840, and is one of several that were taken to northern Alabama over 80 years ago. Machines of this type were introduced in the cotton-growing sections of the South and were operated by slaves. It has been recorded that on one plantation a single machine produced enough yarn to furnish the clothing for 800 slaves.

One of the most interesting exhibits for the section of food is an observation hive of three-banded Italian bees, received through the A. I. Root Co., Medina, Ohio, and C. P. Dadant & Sons, Hamilton, Ill., two prominent manufacturers of beekeeping supplies, and the bee-culture laboratory of the Bureau of Entomology, United States Department of Agriculture. The mahogany and glass observation hive, with a 12-foot plate glass tunnel leading through a window to outdoors, was constructed at the expense of these two firms, while the live bees were loaned by the Department of Agriculture and brought to the Museum from the bee-culture laboratory at Somerset, Md. The hive is the standard size used in commercial honey production, accommodating 20 of the regular Langstroth frames, and constructed of double walls of glass, enabling the activities of the bees to be plainly observed. The long glass tunnel, placed horizontally from the top of the case to the window sill, over the heads of the observers, is connected with the hive by an inclosed sloping

plane which enables one to see perfectly the incoming workers with the pollen baskets on their hind legs packed full of golden pollen. This tunnel, constructed to give visitors a view of the bees passing in and out of the hive, proved to be a handicap to the workers in their task of producing honey. At the height of the honey flow, during May and June, the thin liquid nectar was brought into the hive faster than the bees could fan away the excess moisture and condense the nectar to the consistency of honey. The task of moving the long column of moisture-saturated air inclosed in the tunnel proved too great for the hundreds of pairs of wings endeavoring to ventilate the observation gallery, and it was found necessary to come to their assistance with an electric fan. Blowing a gentle current of air through the long tunnel for a short while assisted in removing many pounds of water from each week's harvest.

The bee-culture laboratory also loaned 54 specimens of liquid honey graded according to color and types of crystallization, specimens of cut combs, honey-filled honey combs and beeswax, examples of beekeepers' tools and appliances, and a full-sized section of a standard beehive arranged for honey production with the frames containing extracted combs, or comb foundation, in proper position.

A collection of 92 prize jars of fruits, vegetables, and meats, put up in glass by members of 4-H Canning Clubs under the auspices of the Office of Cooperative Extension Work, United States Department of Agriculture, was contributed by the Hazel Atlas Glass Co. This company had offered prizes in every State of the Union for the best examples of food products put up in jars of their manufacture by the 4-H Clubs. The collection as assembled represents in kinds and quantity the winter supply of canned foods for an average family.

Twelve jars of typical examples of almonds grown in California during 1926 were transferred from the Bureau of Plant Industry, United States Department of Agriculture. The food value of almonds above that of all other kinds of nuts is fast becoming recognized, and these specimens fill a long-felt need in the exhibit of important foodstuffs.

For the section of organic chemistry, the Museum is indebted to the Tanners' Council of America for over 200 specimens of hides, skins, leather, and leather products, together with photographs of animals furnishing raw materials and of leather processes. This valuable collection, covering almost every important phase of the leather industry, was furnished by 49 different firms, members of the Tanners' Council of America, without expense to the Museum. The material so far received covers the following groups:

1. Skins of the animals furnishing the bulk of the raw material for leather, tanned with the hair on: cow, calf, kid, and horse. 2.

Tanning and coloring agents used in producing leather: barks, extracts, seeds, roots, chemicals, oils, and dyes. 3. By-products of the leather industry: glues and hair products, such as felts, cushions, insulating and packing materials. 4. Heavy leather for shoe soles, a whole side of a large steer hide marked to show the best grades of sole leather, and strips, blocks, and cut soles as supplied to the cobbler. 5. Leather for shoe uppers: calf, kid, kangaroo, and horse leather, in plain, fancy, and patent finishes. 6. Belting leather: an oak tanned "bend" from the thickest part of the hide, and specimens of mechanical belts of all kinds. 7. Bag and strap leather: whole side of bag leather in natural and fancy grains, pigskin leather, straps for all purposes, and men's fancy belts. 8. Harness leather: black and russet, side of lace leather, and strips of lacing. 9. Glove leather: kid, mocha sheep, buckskin, horsehide, and gloves of all kinds. 10. Upholstery leathers: whole hides of great size, finished in fancy grains and colorings. 11. Fancy leather: alligator, snake, lizard, elephant, walrus, seal, and ostrich. 12. Miscellaneous leathers: for textile machinery, gas meters, sporting goods, and bookbinding; also chamois in several stages.

The Rubber Association of America continued its splendid cooperation by contributing 463 additional specimens and many photographs, which were supplied by 13 manufacturing firms, members of the association. The material added this year includes hose, belting, packing, valves, and gaskets; druggists' sundries and hospital equipment, hard rubber articles, battery jars, toys, and sporting goods.

Research in the insulating value of different types of gutta-percha and rubber by the Bell Telephone Laboratories resulted in the assembling of an extensive collection of specimens of these materials from the Dutch East Indies, British Malaya, and the Philippines. The collection, mounted in three hardwood cabinets, was presented to the Museum and forms a valued addition to the study series.

Rods and sheets of an imported casein plastic, sold under the trade name of "Inda," were contributed by the American Machine & Foundry Co.

The Max Ams Chemical Engineering Corporation donated a model of the essential parts of the apparatus used by them for the production of rayon fiber from wood pulp by the viscose process, 34 specimens showing materials used and finished fiber in several forms, and a specially constructed exhibition case for displaying the exhibit.

A series of specimens showing steps in the manufacture of soap and its by-products, fatty acids, and glycerin was contributed by Armour & Co. This includes crude oils, chemicals and refining reagents for refining the oils and converting them into soap, and similar reagents for refining the by-products.

Mrs. William Chapin Huntington, daughter of Frank G. Carpenter, the late well-known author, presented a collection of 95 specimens of footwear collected by her father and herself during travels in many lands. Many of these specimens have been used in illustrating the writings of Mr. Carpenter and his daughter, and represent unique types of footwear.

In the division of medicine, the most instructive exhibit received this year is the one on the subject of vision donated by the American Optometric Association, through Dr. Thomas H. Martin. The first scene of the exhibit pictures members of a primitive family using their eyes for distant vision, the manner in which they function with the least strain; next, a present-day home emphasizing the fact that modern life has imposed upon the eye the severe requirement of near vision; then scenes of laboratories where eyes are tested. Four illuminated legends, with drawings, convey information concerning the anatomy and physiology of the eye, normal vision, common defects of vision, and how these defects are corrected.

The Museum is indebted to the American Dental Association for an exhibit on the subject of oral hygiene. A light from a modeled lighthouse attracts onlookers and warns of the importance of the subject. On each side are arranged health lessons, models of tooth-building foods, the importance of saving the first permanent molars which appear about the sixth year of life, the proper time and method of brushing the teeth, and the necessity of periodic inspections.

The Bureau of Biological Survey, United States Department of Agriculture, designed, and transferred to the Museum an operating model to illustrate how rats transmit disease and the methods of proofing homes against these destructive pests, by which it is hoped to awaken interest in the matter of rat extermination.

The Aladdin Co. contributed to the Museum a specially constructed model illustrating the evolution of the American home and the great progress made in hygienic living conditions. This consists of four scenes. The first is that of a cliff dweller's abode, the second an Indian tepee, the third a log cabin home of the pioneers, and the last a modern home which plays so important a part in the increase of the life span.

The historical exhibits of the division of medicine were enhanced by the addition of 214 models transferred from the United States Patent Office. Some of these American inventions portray important progressive steps in various branches of the healing art, while others bring to mind misleading theories of the past century. One is the original patent model of Morton & Gould's anesthetizing apparatus, which attracts more than ordinary attention because Doctor Morton was the dentist who demonstrated to the

world the art of surgical anesthesia. The surgery models show steps in the development of instruments used in operative work, and the pharmaceutical models assist in telling the story of the important changes which have taken place in medicine making.

A set of old surgical appliances and instruments was presented by Miss Frances M. Cosine. These instruments, some of which are of a type used in this country about 100 years ago, were owned by the donor's grandfather, Dr. Enoch T. Winter.

Dr. George B. Roth added 16 old surgical instruments to the deposit which he made in the preceeding year. All are valuable because of their age, but the one which has attracted the most attention is a stethoscope of the pattern used about 1836 when this important diagnostic adjunct first came into general use in the United States.

Medicinal materials which became official in the latest editions of the United States Pharmacopoeia and National Formulary were contributed by the following companies: Parke, Davis & Co., the Bayer Co. (Inc.), Monsanto Chemical Works, E. R. Squibb & Sons, the Abbott Laboratories, Eimer & Amend, and Schieffelin & Co.

In the section of wood technology, the most noteworthy addition from the standpoint of public interest is the series showing stages in the manufacture of Masonite structural insulation and "Presdwood," presented by Mason Fibre Co. Masonite is a trade name adopted for products made from sawmill wood waste by a process which, through the use of saturated steam at high temperature and pressure, explodes the wood chips and produces a resultant wood pulp consisting of long fibers incrusted with the original wood lignins. The process is unique in two particulars, namely, the chips are neither ground nor cooked to separate the fibers as in similar operations, and no artificial binder is used to consolidate them. To form boards, the exploded fiber is refined, passed over a fourdrinier similar to a paper machine, and placed in a press. In making structural insulation, the time in the press is from 50 to 60 minutes. In addition to insulation, it is used for sheathing, plaster base, interior finish, and as a sound deadener. Presdwood is in the presses about 25 minutes. Its present largest uses are linings for automobile doors, desk tops, card tables, radio cabinets, wall board, and paneling.

Another use for sawmill waste was represented by the contribution from the United Products Co. of specimens showing the manufacture of "woodkets," a recently developed fireplace fuel. Woodkets are compressed sawdust and shavings and are said to leave only about one-half of 1 per cent of ash after burning. Besides affording a clean, easily handled fuel, woodkets add one more link to the chain of processes that are being promoted to conserve the waning wood supply.

A contribution from Mahogany Association (Inc.) consisted of four large panels of solid Central American mahogany, four of solid "African mahogany," and four small inlaid panels showing mahogany in combination with such other valuable woods as East India satinwood, boxwood, ebony, kingwood, and oleo vermelho. Each has a beautiful semipolished surface.

Twenty specimen hardwood boards, all cut in Bath County, Va., were presented by the Tide Water Hardwood Corporation through H. A. Cavendish, manager. They are all highly waxed and very attractive.

The Paine Lumber Company (Ltd.) sent an "African mahogany" table to supplant the birch table formerly accompanying the exhibit of their products. Attached is a small glass case designed for specimens showing the internal construction of their veneered doors.

The Scene-in-Action Corporation contributed an animated forest-fire model made for use in connection with forest-protection activities. The phrase, "Everybody loses when timber burns," is made to stand out prominently by means of a light at the rear. This vivid lesson in color is a fine example of increasing cooperation in forest conservation.

Through the courtesy of H. R. Kylie, United States Forest Service, the Museum secured the loan of one large, lighted camp-fire model and five colored bromides of forest scenes for exhibition during American forest week. The theme of both the model and bromides is, "The forest is your friend—Keep it green"; and one is shown what to do and what not to do when camping on wooded areas.

The most valuable accession to the study collection was that of 801 wood samples received as an exchange from Yale University School of Forestry, through Prof. Samuel J. Record. Most of them are from tropical America, representative of Cuba, Haiti, British Honduras, Guatemala, Honduras, Costa Rica, Panama, Colombia, Venezuela, and Brazil, and were collected with botanical material. Approximately half of them are completely identified, in many more the genus has been determined, and all are linked with numbers in the Yale catalogue, enabling the Museum to receive further information when Professor Record obtains it.

Another fine lot of 45 wood samples for the study series was received as a gift from Sr. Ing. J. G. Ortega, of Mazatlan, Sinaloa, Mexico, collected by the donor in Sinaloa, with all but five identified, and three of these given provisional identifications by Professor Record.

Nineteen hand samples of Manchurian woods and cross sections of trunks of 10 Egyptian trees were received by transfer from the Office of Foreign Plant Introduction, United States Department of Agriculture. The Manchurian samples are very carefully prepared

and are largely quarter-sawed sections with the bark left on. They were obtained by P. H. Dorsett, agricultural explorer, from D. I. Sinaisy, forester in charge of the lumber plant of the Chinese Eastern Railway and the forest concessions of Shitoukhetsy, Manchuria. The Egyptian tree sections are from a country usually considered to be without forests.

Graphic arts.—From the standpoint of permanent acquisitions the year was the most successful one in the history of the division of graphic arts. Specimens to the number of 4,280 were received, of which 3,238 became the property of the Museum, and the remaining 1,042 were accepted as loans for exhibition. Many of the latter have already been returned to their owners. The increment this year shows a gain of 334 per cent over last year's additions, and the total number of specimens in the division, including the section of photography, was increased more than 10 per cent.

The gift of 2,304 prints and etched copper plates from Jean Leon Gerome Ferris is by far the most important and valuable gift of the year and probably of any year in the history of the division. This accession contains the work of many famous artists—drawings, etchings, engravings, mezzotints, aquatints, softground prints, and lithographs, by Rembrandt, Rubens, Drevet, Saint Non, John Faber, Samuel Cousins, Corot, Millet, Gavarni, the Morans, Haden, Lalanne, Jacquemart, and others of more or less fame. Many etchings by the donor and his father, Stephen J. Ferris (1834–1915), are included and also 63 of their etched copper plates. The Ferris gift is large, and, as only a few specimens have been catalogued and matted, it is impossible at this time to give a comprehensive account of its value and importance. It is, however, of great artistic and intrinsic value.

The United States Patent Office transferred 477 models relating to graphic arts and photography which assume more importance at each examination. The models have been roughly arranged but no study has yet been possible. Of the 150 models assigned to photography, many illustrate concretely the development of that art and will add materially to the exhibition series.

Eighteen samples of a new method of commercial printing in water colors were donated by the Aldus Printers (Inc.), through Bert C. Chambers, who was instrumental in its development and patenting. The process is based somewhat on the Japanese method of block printing in water colors. In seeking to obtain the beautiful results of the Japanese color print in a few printings on the modern power press, two problems were involved—to find first a suitable substance in which to cut the design, and, second, a satisfactory medium for the ink. The material found to be most suitable for the blocks is com-

posed of several alternating layers of rubber and cloth. The addition of glycerin to the ink prevents its drying too fast. The design to be reproduced is usually a pen-and-ink drawing. A line cut is made and prints from it are transferred to each of the sheets of rubber which are to print the various colors. The part that is to become the printing surface is carefully cut around with a sharp knife down to the first layer of cloth, and then the part not wanted is pulled off, leaving the design in relief. The rubber plate is mounted type high and is ready for the printer. The various colors are printed first in water color and then the line cut in printer's ink. The only alteration in the press is the substitution of rubber ink rollers for the composition rollers. The prints dry instantaneously, so there is no offset. An improvement nearing perfection makes the line cut in rubber, so that the whole design and colors can be printed from rubber in water-color ink. While the results as a rule are of a commercial nature, still the prints in water color are beautiful and have a distinction all their own. A small exhibit has been installed, and the Museum has the promise of a technical one. Mr. Chambers had been working on the idea for some time when he visited the division and studied the Japanese exhibit; the whole process crystalized after that visit.

Ten examples of the "Pantone" method of preparing plates for printing pictures were donated by the Sun Engraving Co. (Ltd.), of Watford, England, in whose plant the process was developed by A. Ronald Trist. Pantone is a process of making a printing plate of smooth metal, the part of the plate which is not to print being treated with mercury, which repels the printer's ink. The Museum has the promise of additional specimens for a technical exhibit showing the various steps.

Frederick E. Ives, one of the earliest if not the first to develop a commercially successful half-tone process printed from relief blocks, added to the large amount of his early material in the Museum one example of his early three-color work dated August, 1881—a rare historical specimen made from three selective color negatives—and a specimen of his half-tone intaglio process of 1891. Mr. Ives' specialties since the early seventies have been along the lines of graphic arts and photography in black and white and in color, and he has contributed many improvements.

Over 50 specimens of rotary intaglio photogravures were added this year, all fine examples. A large percentage of them, the gift of John U. Perkins, are of historical and artistic interest, being old reproductions of historical paintings. The others were the gift of A. J. Newton and are the work of the Sun Engraving Co. (Ltd.). These are in color, three and four printings, including two series showing progressive results.

A. B. Carty continued his interest in the division and was the means whereby several kinds of hitherto unrepresented specimens were obtained. He also loaned a copy of the largest daily newspaper ever printed, the Miami Daily News of July 26, 1925, containing 504 pages.

About 50 artistic prints in various mediums were added to the permanent collection. George O. Hart contributed 29 examples of his very original work; his results both in subject and treatment are entirely different from those of other workers in the same mediums. Chauncey F. Ryder, an artist of great skill, donated three drypoints and one lithograph; Lee Sturges gave four etchings, which are artistically and technically excellent and cover his field of subjects. George C. Wales contributed two plates and four prints of the clipper ship *Houqua*, showing his method of making a lithograph in two printings. This is one of his series of ships which are very popular at the present time.

Some years ago the division started to collect examples of fine letter press printing in the form of books, pamphlets, and broadsides. This series was slow in getting started but some superior examples have been obtained. Five examples contributed by the Windsor Press of San Francisco, Calif., are of most excellent quality. Two examples of the work of John Henry Nash also of that city were added, one from the printer, a broadside which was awarded first prize at the recent Graphic Arts Leaders Exhibition, and the second a book, the gift of James W. Coffroth. Mr. Nash's work is well represented in the national collections.

William Edwin Rudge continued his interest by contributing many examples from the products of his printing establishment, including separate prints by the Smithsonian process from the North American wild flower book of Mrs. C. D. Walcott, prints from the Pennell book, and samples of aquatone. He also presented in unbound form the four volumes of the book on Gilbert Stuart by Lawrence Park. William G. Mather presented a beautiful book, "The Portraits of Increase Mather" by Kenneth B. Murdock, of interest for its beauty as a book and for its contents. It was designed by Bruce Rogers and printed from the original type of John Baskerville now owned by the Harvard University Press.

A contribution of more than usual interest which came to the section of photography as a gift of Miss Lillian M. Fletcher, consisted of 14 paper negatives and a print made by her father, Abel Fletcher (1820–1890). The note which was around them read: "My first experiments with paper negatives, before glass negatives were invented, about 1845." There is good reason to believe that these are the earliest paper negatives made in the United States. Abel Fletcher lived in Massillon, Ohio, where, in 1843, he was engaged in

making daguerreotypes. Whether he was an inventor or whether he knew of the invention of Fox Talbot of England does not alter the great interest and historical value of these early specimens of photography. The negatives are in perfect condition and excellent prints have been made from them. To Stanley M. Baltzly of Massillon is due the credit of discovering these paper negatives.

As photographic prints in color are difficult to make, the Museum was glad to receive an increment of 27 prints contributed by Frederick E. Ives, 10 being by his process called "Hicrome" and 17 by "Hicarbo." A second gift was from Mrs. Thomas A. Witherspoon of two color transparencies by Joly. The Museum possesses only one other print by this process. The third gift was from Theodore Bolton, a print made by M. Miley & Son, of Lexington, Va., by superimposed carbon tissue printed from three color separation negatives, and taken from the first painting of George Washington by Charles Willson Peale.

Three pictorial prints of historical value were the gift of A. W. Hill, Edinburgh, Scotland; these were made about 20 years ago by a modification of the gum process, known as the "Hill's pigment process." Mrs. Clarence H. White contributed for educational purposes three pictorial prints made by her late husband, the founder of the Clarence H. White School of Photography in New York City. From H. A. Latimer came five examples of his pictorial work; two were carbon prints and three reproductions made by the photogravure process. The very large carbon of the yacht *Lasca* is a wonderful piece of marine photography.

Other pictorial prints worthy of favorable mention included three bromides, the gift of Bertrand H. Wentworth, which were taken along the New England coast. Joseph Petrocelli donated four examples of his artistic efforts obtained on his trip abroad. J. H. Radcliffe continued his interest in the section of photography by donating four prints largely of historical value.

Five additions were made to the motion-picture series. Four came from E. H. Amet and relate to the early history of the art. Among them is a small strip of early film; also a negative of a model basin in which the destruction of the Spanish fleet of 1898 was filmed. John U. Perkins gave an amateur motion-picture camera and projector combined, produced about 15 years ago and one of the first machines put on the market to popularize the art.

Leslie T. Adams, Oxford, England, contributed 12 old lantern slides of about 50 or 60 years ago made by H. W. Taunt and used at children's Christmas entertainments. R. P. Tolman donated a box camera of the vintage of about 1890. The Ilex Optical Co. gave three photographic shutters which show their latest improvements.

A friend who has long assisted the photographic collection, Frank V. Chambers, editor of The Camera, this year contributed 141 old books on photography which are a valuable addition to the library of the section of photography.

Loeb collection of chemical types.—Efforts during the year in behalf of the Loeb collection of chemical types resulted in the receipt of 175 specimens for addition to the collection. A number of materials which were tendered had to be refused as not of the character prescribed, and some specimens were lost through breakage of tubes in transit. Many new contacts with research workers in the chemical field were made by correspondence and a considerable number through personal interviews by the curator, Maj. O. E. Roberts, jr., and much new material has been promised.

History.—During the year 7,183 specimens were added to the collections in the division of history. Space permits of mention of only the more important acquisitions of the year.

The antiquarian collections were increased by a desk chair owned and used during the latter part of the nineteenth century by Susan B. Anthony, presented to the Museum by her biographer, Mrs. Ida H. Harper. A white satin brocade evening dress, with accessories, worn by Mrs. Calvin Coolidge was presented by her, together with a Pi Beta Phi fraternity pin, for the collection of the series of costumes worn in the White House. A light tan hand-embroidered muslin dress of 1845 was contributed by Miss Isabella C. Freeman and Mrs. B. H. Buckingham, and American costumes of the period of the Civil War were given by Miss Isabel Rives and by Miss Lola Tate.

The Maryland Historical Society presented for perpetual preservation and exhibition with the Star Spangled Banner three fragments of that historic flag, removed from it by a former owner and now restored by the society. This flag which flew over Fort McHenry during its successful defense against the British fleet September 13 and 14, 1814, and was immortalized by Key as "The Star Spangled Banner," descended from the commander of the fort, Lieut. Col. George Armistead, to his grandson, Eben Appleton, from whom the National Museum received it as a gift in December, 1912. These pieces, one of red, one white, one blue, were cut from the flag by Mr. Appleton in October, 1880, and given to William W. Carter, whose sister, Miss Virginia M. Carter, in October, 1889, presented them to the Maryland Historical Society in accordance with the wishes of Mr. Carter.

The military collections were increased by the addition of 20 pieces of heavy German ordnance captured during the World War and transferred to the Museum from the War Department, together with 8 United States Army rifles. The uniform coat, chapeau, two sashes,

sword belt, two pairs of epaulets, aiguilette, and gloves of the period of the war with Mexico worn by Col. William G. Freeman of the Fourth United States Artillery, were presented by Miss Freeman and Mrs. Buckingham. A British officer's sword and a Dutch naval cutlass both of the late eighteenth century were donated by Mrs. Francis T. Redwood.

A series of 8 small flags illustrating the development of the United States national colors from 1776 to 1926, specially prepared for exhibition at the Sesquicentennial at Philadelphia, was transferred to the Museum at the close of the exposition. The first of these represents the design of the Grand Union Flag which was flown over the Continental Army at Cambridge, Mass., in January, 1776, and the second the first Stars and Stripes as established by resolution of the Continental Congress, June 14, 1777. The third shows the design of 15 stars and 15 stripes as established by act of Congress approved January 13, 1794, and as flown during the War of 1812–1815. The fourth flag shows the design established by act of Congress approved April 4, 1818, which provided that the number of stripes be reduced from 15 to 13 and that the stars should represent the number of States in the Union, each new star to be added to the design on the 4th of July succeeding the admission of the State thus represented. The fifth shows the design during the first year of the war with Mexico, 1846–1847, when the union contained 28 stars. The sixth shows the design during the first two years of the Civil War, 1861–1863, when the union contained 34 stars. The seventh shows the national colors during the war with Spain, 1898, when the number of stars was 45. The eighth and last shows the design used during the World War, 1917–18, when the number of stars was 48.

The naval collections were increased by a gold mounted sword which was presented by the State of New York to Commodore Thomas Macdonough, United States Navy, in recognition of his achievements during the War of 1812–1815, and a pair of gold-mounted pistols presented to him by the State of Connecticut in recognition of the same services. These three objects of unique historical and artistic interest were lent to the Museum by his grandson, G. H. Macdonough.

The numismatic collection received a number of additions. A gold medal awarded by act of Congress approved June 28, 1902, to Lieut. Ellsworth P. Bertholf, United States Revenue Cutter Service, in recognition of his services in connection with the expedition of 1897–98 for the relief of whaling ships in the Arctic regions, was lent by Mrs. Emilie E. Bertholf. A bronze medal commemorating the centennial anniversary of 1927 of the Baltimore & Ohio Railroad Co. was presented by that company. An artistic bronze plaque

designed by Emil Fuchs in commemoration of the International Philatelic Exhibition, New York, 1926, was given by the Association for Stamp Exhibitions (Inc.).

A collection of 43 United States gold, silver, nickel, and bronze coins, struck 1920–1926, a series of 81 medieval and modern European coins and 4 Chinese coins were transferred from the Treasury Department, as were also a bronze medal commemorating the seventy-fifth anniversary of the founding of the Aztec Club of 1847 and two copies of the bronze portrait medal of Alexander Hamilton, first secretary of the United States Treasury.

The pictorial collections were increased by an oil painting by William S. Horton, showing Gen. John J. Pershing and the American troops traversing the Place de la Concorde on the occasion of the victory fête in Paris, July 14, 1919. This painting was presented to the Museum by Madame Marius de Brabant through Mrs. H. Fairfield Osborn. A second oil painting of historic interest received this year is one by Charles Bryant entitled "The American Battle Fleet in Sydney Harbor," presented to the United States by citizens of New South Wales and transferred to the Museum from the State Department.

Henry K. Bush-Brown, the sculptor, contributed nine examples in plaster of his skill in making men of history very real to the generations following. These pieces consisted of an equestrian statuette of Gen. Anthony Wayne, being the working model for the statue at Valley Forge, Pa., erected by the State of Pennsylvania; an equestrian statuette of Gen. John Sedgwick, being the model for the statue at Gettysburg erected by the State of Connecticut; portrait bust, life size, of Gen. G. G. Meade, being a study for equestrian statue at Gettysburg erected by State of Pennsylvania; portrait head of Gen. John Fulton Reynolds, being study for equestrian statue at Gettysburg erected by the State of Pennsylvania; portrait bust of Admiral Harry C. Taylor; portrait bust of Dr. A. W. Cowles, president of the first College for Women at Elmira, N. Y.; portrait bust of Henry Kirke Brown, being model for bronze in the hall of remembrance in New York University; and portrait heads of Gen. Daniel E. Sickles and of Gen. David McN. Gregg.

A miniature plaster bust of Grover Cleveland by A. Pedro Plaquepagne made in 1892 was donated by Thomas Tapscott Gill, through Mrs. George B. Gill. A statue of Laddie Boy, by Miss Bashka Paeff, cast from pennies contributed by the newsboys of the United States in memory of their friend, Warren Gamaliel Harding, was presented by The Roosevelt Newsboys' Association, through E. E. Keevin, director.

The philatelic collection was increased by 5,856 specimens of which 4,956 were transferred from the Post Office Department and 900 were a donation.

The transfer from the Post Office contained, in triplicate, the new regular and commemorative issues of all the countries in the Universal Postal Union, a series of Hungarian stamps issued 1913 to 1924, together with the new United States air mail stamp and the United States stamp commemorating the 150th anniversity of the battle of White Plains.

In 1926 the division came into possession of a collection in a branch of philately new to the Museum, through the transfer from the Post Office Department of 12,314 precancel postage stamps, which had been donated to the department for reference by Walter L. Gates, of Teaticket, Mass. This year the Precancel Stamp Society, through its president, John L. Parker, offered its services in building up here a complete series of these stamps. The society appointed Mr. Gates as its official representative to procure by various methods the stamps needed to complete the collection and to assist the Museum philatelist, if need be, in mounting the specimens. The society this year donated 900 additional precancels, all new to the collection.

INSTALLATION AND PRESERVATION OF COLLECTIONS

Mineral and mechanical technology.—The most extensive rearrangements of exhibits had to do with the transfer elsewhere of a collection of 1,106 objects received from the War Department in 1923 and assigned here as relating to the subject of communication. As this collection is made up entirely of American, allied, and German war signaling equipment, it was transferred to the division of history for incorporation in the war collections, to which group it rightfully belongs. Space thus made available was immediately utilized in the expansion of the collections on communication and machine tools. It permitted the exhibition of the more important objects in a less crowded atmosphere, and the expansion of the machine tool collection, which had been concentrated in a space considerably less than one-third of that needed.

With the cooperation of the division of history, the division of mineral technology was able to place on exhibition from storage several exhibits showing the production and refining of several of the rarer metals. While these exhibits, which have been held in storage for a great many years, are by no means ideal, they have informative value and are being used temporarily pending the time when added exhibition space will make possible more complete and modern collections.

Besides these major rearrangements, the preparator, F. C. Reed, and assistant, W. L. Dawsey, were constantly at work in the main-

tenance of the working models, repairing exhibits, cleaning collections, and making minor rearrangements of individual objects. In conjunction with this work the assistant curator, Paul E. Garber, and aid, F. A. Taylor, were constantly engaged in revising old descriptive labels, preparing new labels, and attending to general administrative work.

The divisions are equipped with but one preparator and an assistant, a force by no means adequate to keep the collections in perfect condition. Changes and improvements in descriptive labels on both old and new collections are a perpetual task, and it has been impossible as yet to be fully up to date in this respect.

Textiles, foods, organic chemistry, wood technology, and medicine.—In the subjects under the general supervision of the curator of textiles, all new material has been installed as soon after its receipt as possible. Twenty-three installations of new exhibit material or rearrangements of exhibits already on view were made in the textile halls during the year, the principal changes being in the cotton and silk sections. The most important new exhibits comprised rayon, Javanese batiks, hooked rugs, sun-fast cotton goods, and novelty dress silks.

In the section of foods nine exhibit cases were installed. The most important new exhibits were those showing honey production and canned foods for winter consumption by an average family.

In the section of organic chemistry 42 new installations or rearrangements were made on the south and southwest court galleries, covering such subjects as rubber, leather, footwear, felt hats, gut strings, rayon, and soap. The most noteworthy are the series of cases devoted to the leather industry, and the exhibit showing the tapping of a rubber tree to obtain the latex or milk. The latter introduces the series of rubber exhibits installed in the preceding year. Its installation at that time was prevented by an accident which seriously damaged the wax figure of the tapper. The figure has since been restored by W. H. Egberts, who also skillfully modeled the bark and tapping cuts on a real trunk of a rubber tree from an East Indian plantation, which had been in storage since the International Rubber Exposition in 1912.

In the division of medicine 47 new or rearranged installations were made during the year. The installation of the materia medica exhibits was altered to conform to a new scheme of classification, and the history of medicine and the pharmacy materials were reorganized to permit the insertion of new materials recently received. The most important of the new installations of the year were the Gorgas memorials, three cases of patent models, the oral hygiene and eye exhibits, the American home model, and the model depicting the transmission of disease by rats. The saw glands and glandular

tissues of the organotherapy exhibit were replaced with new material, and the hospital exhibit in the Natural History Building was furnished with new labels.

In the wood court 14 installations of new exhibition material and two rearrangements have been made during the year. The installations of new material included: Commercial woods of Virginia; the table and case showing type construction of Paine Lumber Co.'s doors; animated forest fire model; mahogany panels; digger pine and Douglas fir cones; tree planting hints and helps; forest fire protection; United States Forest Service camp-fire model; forest utility charts; a recently developed fireplace fuel; and the manufacture of "masonite." The original reversing apparatus on the Paine doors was completely removed, and a much better device installed. The Japanese timber bamboos were assembled into two groups instead of three as formerly to conserve space and improve appearance. Samples of about 900 hitherto unrepresented woods were incorporated in the study collection, and 525 hand samples of wood were prepared for distribution and exchange.

Graphic arts.—Additions of note to the permanent exhibition series included a technical exhibit of engraving specially prepared for and shown as part of the Museum's exhibit at the Sesquicentennial at Philadelphia; 12 specimens from the Ferris gift which were mounted by the curator; and the Wales gift showing the making of a lithograph in two printings.

The Museum has for many years had on exhibition in the division of history the printing press on which Benjamin Franklin worked when he first went to England in 1725–26. The press was this year transferred to the custody of the division of graphic arts. In placing it on exhibition in the main hall of the Smithsonian Building advantage was taken of the opportunity to so reassemble the parts that the press now conforms to the old engravings of it. The press is valuable not only from its association with Franklin but as a genuine press of that period which has not been restored in any way.

While fewer new exhibits were incorporated, the permanent exhibition series as a whole was greatly improved by rearrangement. Much of the exhibition space of the division in the Smithsonian Building was dismantled for about six weeks during the middle of the year to allow the Smithsonian Institution to utilize the main hall and connecting range for an important conference early in February. Special exhibits of the varied activities of the Institution and its branches brought together here for this conference were continued for several weeks. In providing space in the connecting range for the conference, the printing presses and type-casting and composing machines occupying the center of the range were permanently moved into the chapel. This necessitated the complete rearrangement of

the cases in that hall. After the conference a number of flat-top cases were placed in the center of the range, and these have since served for the display of the special loan exhibitions. Being adjacent to the office of the assistant curator, R. P. Tolman, they can be installed and cared for with a minimum of effort.

In the section of photography a general rearrangement of the long case on the north wall of the court gallery was undertaken with a view to providing space here to exhibit the comprehensive collection of early motion-picture apparatus which the Museum has been assembling, mainly through the cooperation of The Motion Picture Producers and Distributors of America (Inc.) and through C. Francis Jenkins and others more or less interested in the industry. The Museum possesses many motion-picture cameras, projectors, and other apparatus and prints, only a small part of which it has been possible heretofore to place on view. Two such projectors—a Latham projector used in 1895 and an early Mutoscope projector—formed a part of the Museum's exhibit at the Sesquicentennial and were on their return from Philadelphia added to the exhibition series.

Special exhibitions were arranged every month and during most of the year there were two series, one relating to printing processes and the other relating to pictorial photography.

"The Fifty Prints of the Year," sponsored by the American Institute of Graphic Arts and shown August 2 to 28, consisted of 25 conservative and the same number of modern prints, in various mediums, so that the two trends in art could be studied side by side.

The inserts of the Sesquicentennial number of the American Printer were shown during the month of September. These related to the history of the United States in the last 150 years, and from the graphic arts standpoint were of value as illustrating the quality of work now being produced in the United States from the Atlantic to the Pacific in designing, illustrating, engraving, and letter press printing. These inserts were the work of a hundred different concerns, and are the property of the Museum.

Sixty-three wood-block prints in color by Gustave Baumann, Santa Fe, N. Mex., were shown October 2 to 29. These were lent by the artist and were mostly of western subjects printed in the European manner.

Fifty-one wood-block prints in color made and lent by Mrs. Bertha Lum, Hollywood, Calif., were displayed October 30 to November 26. Oriental in feeling, conception and execution, these formed a great contrast with those of Mr. Baumann.

Seventy etchings, drypoints, and wood-block prints in color by B. J. O. Nordfeldt, Santa Fe, N. Mex., were shown as a loan from

him November 27, 1926, to January 2, 1927. His early work was conservative while his recent productions are in the modern manner.

A group of 24 very rare and valuable eighteenth century color prints, lent by Arnold Seligmann, Rey & Co. (Inc.), was shown January 3 to 29, 1927. This exhibit was appreciated by the public, as prints of this quality are scarce and seldom seen in any quantity.

Sixty etchings, dry points, and aquatints by H. M. Luquiens, an American artist of Honolulu, were displayed as a loan January 31 to February 26. All were of Hawaiian subjects.

Fifty dry points, lithographs, and drawings by Chauncey F. Ryder, New York City, were loaned by that artist for exhibition February 28 to March 20. His dry points are among the most skillful the Museum has ever shown.

Fifty-five etchings made and lent by Lee Sturges, president of the Chicago Society of Etchers, were exhibited March 28 to April 23. His mountain scenes in the West are very impressive.

Fifty lithographs by Bolton Brown, New York City, were shown April 25 to May 21. All his work is done directly on stone, and his prints have the true qualities of art.

In the section of photography, 50 bromoils by Floyd Vail, New York City, were exhibited July 15 to September 30, 1926, the first showing of his work in this medium, which gives him a better method of expression than bromide.

Through Mr. Vail's efforts 201 prints comprising the pictorial section of the seventy-first annual exhibition of the Royal Photographic Society of London, were shown during December. This is the first time such a series has been seen in America, and marks a step in the closer relations that now exist between the pictorial workers of the two countries.

Sixty-nine photographs, "In Old World Gardens," by Miss Frances Benjamin Johnston, New York City, were exhibited in February, 1927. These were made by her during a recent sojourn in England, France, Spain, Italy, and Algeria.

Twenty-eight portraits by Marcus Adams, London, England, were shown March 15 to 31. The series was brought to this country for display at the convention of the Photographers' Association of America before which Mr. Adams was an invited speaker.

The last show of the year, hung June 15 to extend through the month of July, consisted of 127 prints by members of the Cleveland Photographic Society, of Cleveland, Ohio. These are in various mediums from bromides to color photography.

History.—The work of outstanding importance accomplished in the division of history this year was the installation in the Museum of the military and naval collections which had been shown at the

Sesquicentennial Exposition in Philadelphia. This material, with the exception of the series of flags already mentioned, was all the property of the Museum, selected mainly from the reserve collections. Its installation now in the exhibition series, while adding a new note to the exhibition halls, adds nothing new to the Museum's possessions. It calls attention, however, to the vast resources of historical material available for display when additional space can be obtained.

The exhibits from Philadelphia, besides the flags mentioned, consisted of a series of military uniforms showing the types used by the United States Army from 1776 to 1926, all originals except those of the Revolutionary period, which are reproductions; a series of swords carried by officers and men of the United States Army during the same period, the earlier ones of foreign manufacture and those of the first decade of the nineteenth century examples of the first formal military swords produced in America; a series of firearms used in the Army, 1776 to 1926, from flintlock pistols to the modern rifle; a series of shoulder straps worn by officers of the United States Army from 1850 to 1898, with those worn during the World War; a complete series of types of medals and decorations awarded for special services in the United States Army during 1862 to 1926; models of the ships of Columbus, of the *Mayflower*, and of the *Constitution;* and a series of United States and foreign commemorative postage stamps issued from 1876 to 1926.

Notable changes made during the year in the arrangement of the floor space and the location of exhibits, particularly in the Arts and Industries Building, have also greatly enhanced the educational value of the historical collections. The west hall which had been occupied for a number of years by specimens in anthropology, mineral technology, and history was entirely rearranged. All the anthropological material was removed to the Natural History Building and the hall was divided lengthwise, the south side for the division of mineral technology and the north side for the division of history. The increased historical space was at once installed with antiquarian and military materials.

The northwest court which formerly contained the postage-stamp collection and a miscellaneous collection of antiquarian and military materials arranged in cases of various sizes, was also completely overhauled. The postage-stamp cabinet, formerly set up in the shape of a rectangle in the center of the court, was moved to the numismatic hall, where the various sections were placed in a single line along the south wall. The value of the postage-stamp exhibit was vastly increased by the improved lighting facilities, by the more prominent location where it can hardly be overlooked by the visitor, by the

arrangement of all the frames in a single line, and finally by its placement in proximity to the numismatic collection to which it is more closely related than to any other class of historical material. The miscellaneous floor cases with their contents were taken from the court and scattered through the other historical halls, thus affording space in the court for two of the exhibit series from Philadelphia, namely, the military uniforms installed in remodeled door screen cases, and the military swords in slope top cases.

In the north hall the antiquarian, military, and naval collections on display were reclassified and reinstalled, greatly improving general conditions.

A large amount of military materials of the World War period was transferred from the Arts and Industries Building to the Natural History Building. The historical materials in the latter building all belong to the period of the World War, and the present plan is to preserve and perfect this division of material between the two buildings.

The time of the curator of history, T. T. Belote, was largely devoted to a revision of the national numismatic exhibit in anticipation of the meeting of the American Numismatic Association in Washington during the third week in August, 1926, and to the preparation of plans for the installation of the exhibits from the Sesquicentennial, of new exhibits in the west hall and the northwest court, and to the change in the north hall.

In all the above Mr. Belote was ably assisted by the assistant curator, Capt. Charles Carey, who also accomplished independently much work along other lines, including the completion of the installation of the historical exhibit at the Sesquicentennial; the care of the entire Smithsonian exhibit there from August 8 to September 20; the rearrangement of the exhibition collections in the northeast court of the Arts and Industries Building and of the military and naval storage collections.

In addition to superintending the moving of the philatelic exhibition collection already mentioned, the philatelist, Mrs. Catherine L. Manning, installed a special section of the postage-stamp cabinet as a part of the exhibit at the Sesquicentennial. This section contained 50 vertical sliding frames, each providing exhibition space on each side for four rectangular mounts 8 by 10 inches in size. Upon these she mounted and labeled a series of 1,889 commemorative postage stamps and envelopes issued by the United States and 100 foreign countries during the period 1876 to 1926.

Under the direction of the philatelist the collection of precanceled postage stamps was classified and catalogued by Walter L. Gates, who kindly volunteered his services for this purpose and worked

in the Museum from November 8 to November 22, 1926. This collection includes over 13,000 postage stamps precanceled in many of the leading cities of the 48 States of the Union and in the District of Columbia.

Present condition of the collections.—Probably no recent year has witnessed so many changes in the location and arrangement of the collections in the department of arts and industries and the division of history as were accomplished the past year. The Sesquicentennial and the Smithsonian conference both caused much activity in these lines, with the result that the exhibition halls at the end of the year were, it is felt, in better condition than ever before, especially as to grouping within the various divisions. In all the divisions the appearance of the public exhibition was good and the collections were well labeled, but lack of space for expansion is keenly felt.

INVESTIGATION AND RESEARCH

The collections in the wide field covered by the department of arts and industries and the division of history offer opportunities for investigation and research in many and varied lines. These collections are always freely available for study not only by members of the staff but also by students and research workers generally, and Museum employees are always glad to assist other investigators in so far as lies in their power. The ever increasing number of specimens without corresponding increase of personnel, however, limits greatly the amount of time that can be used for such purposes, since the actual care and preservation of the collections must of necessity take precedence.

Research by members of the staff.—For a number of years the assistant curator of the divisions of mineral and mechanical technology, Paul E. Garber, has devoted as much time as possible to research in aeronautical developments. The results have been shown from time to time in the construction of aircraft models, and toward the close of this year a handbook of the aeronautical collections was written. By means of numerous illustrations from the collections and descriptive matter, a thumb-nail sketch of the history of aeronautics is presented which is believed will prove of value to the layman.

During the last six months the curator, Carl W. Mitman, and the aid, F. A. Taylor, were engaged in research concerning the progress and developments in power generation and transmission, chiefly with a view to the design of an extensive exhibit bearing on this subject.

In the division of textiles a systematic study of the New World species of *Gossypium* and other genera related to the cotton plant, begun some time ago by the curator, F. L. Lewton, was continued

As routine work permitted, work was done on the preparation of comprehensive technical definitions of textile fabrics based upon authentic specimens in the collections and the examination of available current textile literature.

A rearrangement of the study collection of woods from a geographical grouping to one arranged according to the most approved botanical classification has facilitated study of the wood structure of related plant families and aided the classification of wood specimens of unknown species.

The revision of the classification of the materia medica specimens continued to receive the principal attention of the assistant curator, division of medicine, Dr. Charles Whitebread, throughout the year, and the study of American medical history begun some months ago was also continued as opportunity offered.

In the division of history the curator, T. T. Belote, continued and brought near to completion a treatise on military and naval swords, and the assistant curator, Capt. Charles Carey, continued the preparation of a monograph on the firearms in the National Museum. Information was furnished in connection with an unusually large amount of correspondence relating to matters of general historical museum interest.

Research of outside investigators and assistance to Federal bureaus and private individuals.—Assistance given by members of the staff to two projects, one private and one Federal, may become of far-reaching importance. Mr. Mitman devoted the greater part of the first half of the year to developing plans for a proposed industrial museum for New York City. As to the Federal project, Mr. Mitman and Mr. Lewton continued work begun last year in connection with the examination of the accumulation of Patent Office models under the act of Congress of February 13, 1925, returning many models to inventors or their heirs, depositing others in educational establishments, and bringing many hundreds to the National Museum for further study before definitely deciding to keep or dispose of same.

Among the Patent Office models selected for preservation in the division of mechanical technology were a number pertaining to calculating machines, including three models of Barbour, whose pioneer work was of much importance in the advancement of this art. Barbour's models were loaned for study purposes to J. A. V. Turck, of Chicago, and L. Leland Locke, of Brooklyn, both of whom are recognized as authorities in the calculating machine field and have written numerous articles bearing on their work.

From time to time the Bureau of Roads of the Department of Agriculture has called upon the division for assistance, particularly with regard to questions pertaining to the history of transportation. This bureau is engaged quite extensively in the preparation of models

and educational motion pictures bearing on the general subject of highway transportation, and the Museum has cooperated whenever called upon. The Baltimore & Ohio, the Southern, and the Delaware & Hudson Railroad Companies were assisted from time to time during the year in connection with individual historical studies. Miss Frances Schwartz, assistant to J. D. Ellsworth of the American Telephone & Telegraph Co., spent some time in the division examining and studying data on the subject of communication. Miss Frances Foster, editorial assistant to Dr. Harold Rugg, Teacher's College, Columbia University, who is engaged in the preparation of a series of seventh and eighth grade textbooks on the industries of the United States, was given all possible assistance, particularly in the form of illustrative matter to be used in these publications.

Another type of assistance rendered was that of checking facts contained in manuscripts for publication by private individuals. Thus the chapter on aviation developments contained in a forthcoming book by Mark Sullivan was carefully edited, and the chronology record on aviation prepared by Maj. Ernest Jones was similarly checked. In addition to the special help of which the above instances are typical, the division is daily rendering informative service through the regular correspondence channels.

In the division of textiles, the large reference collection of wool fabrics was studied by Francis Fries, a graduate of the Philadelphia Textile School, for designs of fancy fabrics. Specimens of coir fiber were supplied the Department of Agriculture for use in a hearing before the Interstate Commerce Commission.

A member of the staff of the United States Tariff Commission examined the exhibits and literature on cork. Representatives of the United States Forest Service, the United States Forest Products Laboratory, and Lieutenant Harrison, of the Bureau of Aeronautics, United States Navy Department, sought information from the collections in connection with researches on the use of bamboo in the construction of airplane pontoons. Prof. Toyokazu Suzuki, of the Agricultural and Forestry College, of Suigen, Korea, examined methods of handling exhibition and reserve collections of wood. Dr. Ryozo Kanehira, director of the department of forestry, Government Research Institute, Taihoku, Formosa, also studied the wood collections, being particularly interested in wood anatomy and the by-products of wood. C. P. Wright, of the department of economics of Harvard University, utilized Museum material on forest conservation, in which subject he was engaged in research. C. L. Redfield, Chicago, Ill., and P. J. Harkins, Washington, D. C., examined the "masonite" products. H. S. Olin, architect, of Baltimore, Md., studied the Museum's specimens of wood sections and micrographs of wood.

The curator of textiles, F. L. Lewton, furnished technical information on wool manufacture, Levers lace machines, and the working of embroidery jacquards, to the textile section of the Bureau of the Census, United States Department of Commerce. He also identified specimens of fiber for the United States Appraiser's Office, Treasury Department, and supplied a valuation report on a sample of raw silk produced in America, for the Bureau of Entomology, United States Department of Agriculture. Special information on industrial raw materials and the identification of specimens were furnished to several bureaus of the Government, and to numerous individuals, the identification of fibers, fabrics, gums, resins, seeds, and woods for individuals both in and out of the Government service continuing to be a part of the regular work. As heretofore, Mr. Lewton furnished the identification of cottons and cottonseeds introduced by the Office of Foreign Plant Introduction, United States Department of Agriculture, and to him were referred letters requesting information on silk and artificial silk received by various Federal departments. Three lots of material were received for identification and report.

In the division of graphic arts, the assistant curator, R. P. Tolman, rendered assistance in the identification of old paintings, miniatures, prints, books, especially Bibles, and newspapers both for institutions and individuals, including, among others, the Frick Art Reference Library and the Metropolitan Museum of Art, both of New York City. Harry B. Wehle, assistant curator of paintings in the latter, was aided concerning miniatures, both in connection with the exhibit in that museum and with Mr. Wehle's new book on the subject. Information was also furnished individuals bringing objects in person for identification.

DISTRIBUTION AND EXCHANGE OF SPECIMENS

Distributions from the department of arts and industries and the division of history aggregated 6,041 specimens, as follows: Gifts in aid of education, 408; loans for special exhibitions elsewhere and for research or study purposes, 5,200; transferred to other Government establishments, 5; and returned to owners, 388.

The gifts included 401 Patent Office models relating to mechanical devices, which were donated to colleges, high schools, museums and other institutions under the terms of the act of Congress of February 13, 1925. Some 427 dental patent models not needed immediately for display in the National Museum were lent, 419 to Columbia University School of Dental and Oral Surgery, New York City, and 1 to the Northwestern University Dental School, Chicago, Ill. The other loans were chiefly for exhibition purposes and comprised mainly the traveling loan exhibits of the division of graphic arts.

NUMBER OF SPECIMENS UNDER DEPARTMENT

The total number of specimens in the department of arts and industries and the division of history on June 30, 1927, was 447,166 assigned as follows:

Mineral technology	4,188
Mechanical technology	6,009
Textiles	12,080
Wood technology	5,844
Organic chemistry	17,662
Foods	1,192
Medicine	14,036
Graphic arts, including photography	28,631
Loeb collection of chemical types	990
History	355,934
	447,166

LIST OF ACCESSIONS TO THE COLLECTIONS DURING THE FISCAL YEAR 1926-27

(EXCEPT WHEN OTHERWISE INDICATED, THE SPECIMENS WERE PRESENTED OR WERE TRANSFERRED BY BUREAUS OF THE GOVERNMENT IN ACCORDANCE WITH LAW)

ABBOTT LABORATORIES, North Chicago, Ill.: Specimen of epinephrin, a medicinal substance made official in the U. S. Pharmacopoeia X (93500); (through Dr. E. H. Volwiler); specimen of chemical for the Loeb collection of chemical types (97637).

ACADEMY OF NATURAL SCIENCES, Philadelphia, Pa. (through Dr. Henry W. Fowler): 208 specimens of fishes from Hawaii and neighboring islands (94517, exchange); 5 specimens of flies (94691).

ADAMS, Leslie T., Oxford, England: 12 lantern slides (96066).

ADAMS, Marcus, London, England: 29 portraits for special exhibition of his work from March 15 to 31, 1927 (96239, loan).

ADDINGTON, Hugh M., Nicklesville, Va.: Shed skin of a black snake (96377).

AELLEN, Prof. PAUL, Schaffhausen, Switzerland: Plant from Sweden collected by Carl Blom (92900); 92 plants (95383.), Exchange.

AGRICULTURE, DEPARTMENT OF:

Bureau of Agricultural Economics: Set of official standards of the United States for American cotton linters; bulk samples of seven grades of cotton linters, and a specimen of cottonseed oil cake (95104).

Bureau of Biological Survey: Model illustrating the part rats play in disease transmission and the methods of proofing houses against them (89421); 22 plants collected in Florida by A. H. Howell (92143); 24 cleaned skeletons of birds (92326); 11 skeletons of birds from Arizona and Nevada and 11 raven eggs from Oregon (92541); eggs and larvae of land crabs collected at the Bureau of Fisheries Station, Key West, Fla., by Philip R. Stephenson, acting superintendent; 10 land crabs and 26 vials containing eggs and young, being material that was used in land crab experiments at the fisheries biological laboratory, at Key West, Fla., during the month of September, 1926 (92549, 93303); 3 eggs of a curassow laid by a captive bird at Sapelo Island, Ga. (92860); 73 reptiles and batrachians including specimens from Florida, Nevada, and Mexico (92955); 96 specimens of lichens collected in Alaska by L. J. Palmer (92994); young yellow-crowned night heron and 2 basket stars from Florida (93496, 94936); 3 fossil bison bones, 25 specimens of lichens, and 2 skeletons of birds from Alaska (94103, 94384, 94385); (through W. L. McAtee) plant from South Dakota (94236); 8 skeletons of birds from the eastern United States (94371); 9 snakes, 1 turtle, 1 toad, and 2 alligators (94486); 211 plants collected in Alaska by Messrs. Palmer and Miller (94741); 187 reptiles and amphibians from Guatemala (95873); skeleton and skin of 2 birds and 640 mammals (96293, 96941).

AGRICULTURE, DEPT.—Continued.

Bureau of Entomology (through E. A. McGregor, Lindsay, Calif.): 30 specimens of undetermined insects (92795); 11 isopods collected by Dr. S. C. Bruner, Santiago, Cuba (92952); 85 specimens of determined coleopterous larvae (93547); (through F. C. Bishopp) 6 specimens of flies (94391); crab collected by James Zetek on Barro Colorado Island, Canal Zone (94781); 19,373 miscellaneous insects (97143).

(See also under R. W. Harned.)

Bureau of Entomology, Bee-Culture Laboratory, Somerset, Md.: Colony of 3-banded Italian bees, samples of honey, beekeeping supplies, and photographs on the subject of beekeeping (93490).

Federal Horticultural Board: 4 land shells from New Orleans, La. (92352); isopod from China, land shell from Honduras, and tree frog from South Carolina (92353); 43 isopods (92365, 92453, 93523, 96308, 96618); 3 land shells and an isopod from Jamaica (92386, 92865); 16 land shells from the West Indies and Germany (92399); 3 isopods from Cuba (92535); milliped from Java (92602); lizard from banana debris and pupa and larva of a dipterous insect (92603); isopod from the Philippine Islands, and 2 shells from Costa Rica (92739); gecko from Costa Rica (93175); shell and 2 insects from China (92824, 93173); mollusk from New England (92866); 4 isopods collected at Rosemont, Montgomery County, Pa. (92976); 4 land shells from the Azores and Switzerland, and an isopod from the Azores (93190); 4 land shells from Australia, and 7 isopods from India (93202); 2

AGRICULTURE, DEPT.—Continued.

Federal Horticultural Board—Con. isopods from France, and 4 mollusks from England and Nova Scotia (93250); isopod from Holland, 11 from France, and 5 from China (93303); 2 isopods from Holland and 2 land shells from Costa Rica (93438); mollusk from Mexico (93882); 14 mollusks from France, Porto Rico, England, and Germany (93844, 94243); isopod from the Philippine Islands (94257); frog from Savannah, Ga. (94499); 16 land shells and slugs from Europe, and 11 isopods from India (94504); 10 amphipods, 1 isopod and 4 mollusks (94600); mollusk from Brazil (94748); mollusk from Bermuda and a lizard from Honduras (95180); 2 slugs from the Azores (95545); 2 slugs and a snail from Ireland (95678, 96087); 4 isopods from Costa Rica, and Holland and a mollusk from Ireland (95759); 4 land mollusks from England and Spain and 3 isopods from Italy (95898); 5 slugs and snails from Europe and a myriapod (96902); 8 land mollusks from England, Hungary, and Cuba, and 9 isopods from England (96067); 7 land shells from the West Indies, Bermuda, and Central America, also 1 land planarian from Bermuda (96446); slug from Germany (96807).

Forest Service: Type specimen of plant from California (94581); 16 posters for use in exhibit arranged for American forest week (96300); (through H. R. Kylie) campfire model and 6 colored bromides of forest scenes for exhibition during American forest week (96301, loan); photograph of a multiple cone from shortleaf pine (96983); plant from Oregon 97068).

AGRICULTURE, DEPT.—Continued.
Bureau of Plant Industry: 4 plants (92407, 94541); (through Prof. A. S. Hitchcock) 2 plants from Peru (92408), 9,936 mounted specimens of grasses, plant from Argentina, and 2 plants from Brazil (94257, 94946, 95747, 96847); 5 plants collected in Cuba by Professor Hitchcock (94758); (through O. M. Freeman) 2 plants (92409, 93383); 20 plants from Arizona (92410); (through Frederick V. Coville) 1 specimen and 6 photographs of plants from Maryland; 3 plants from Texas; 58 plants and 10 photographs (92402, 93205, 95870); (through Dr. T. H. Kearney) 1,057 plants from Arizona (92463, 94229, 94729, 94784, 94999, 96466, 96963, 97095), 71 specimens of ferns from Arizona (93396, 94215, 94582, 95341); (through Mrs. Agnes Chase) 2,532 specimens of grasses (92479, 94258, 94512); plant from New Jersey (92507); (through Dr. C. R. Ball) 42 plants (92954, 93191, 93292); 7 plants from Colorado (93207, 93493); 3 plants from Uruguay and Paraguay (93149); (through L. H. Dewey) plant from Cuba (93264); (through H. C. Skeels) 228 specimens of plants collected in Morocco and other localities by Dr. David Fairchild (93426), 30 specimens of ferns collected in the East Indies by Doctor Fairchild and Mr. Dorsett (93494), 1,400 plants collected in China and Manchuria by Mr. Dorsett (93538), 43 plants collected in the East Indies by Messrs. Fairchild and Dorsett (94719), plant from Georgia (96767); (through M. W. Talbot) plant (93475); (through Prof. O. F. Cook) 15 plants from South America, 4 photographs of palms from Venezuela, 15 palms (93623, 94009, 94109); (through John A. Stevenson) 19 hand samples of Manchurian woods (94562); cross sections of 10 Egyptian trees (94563); 12 named varieties of almonds grown in California in 1926 (95109); 106 plants collected in South America by Dr. J. R. Weir (90094); (through Dr. E. F. Blake) 76 plants collected in Arizona by Dr. T. H. Kearney (96768).

AGRICULTURE, DEPT.—Continued.

AGRICULTURAL EXPERIMENT STATION, Logan, Utah: 4 bees representing native species (90458).

AGRICULTURAL EXPERIMENT STATION, Department van den Landbouw, Paramaribo, Surinam (through Gerold Stahel, director): 5 plants (96075).

ALADDIN CO., THE, Bay City, Mich.: Model illustrating the evolution of the American home and emphasizing the advance in hygienic living conditions (93552).

ALDUS PRINTERS (INC.), THE, New York City (through Bert C. Chambers): 12 examples in color produced by the new "Jean Bertz" process of color printing, Patent No. 1595736 (93165); 6 examples of the new method of printing in water color, developed by the donor (96424).

ALEXANDER, Dr. C. P. (See under Dr. Edward Jacobson.)

ALFARO, Sr. Don Anastasio, San José, Costa Rica, Central America: 27 specimens of orchids from Costa Rica (92784).

ALLAN, James, Mountain Park, N. Mex.: 2 plants (94604).

ALLEN, C. C., St. Petersburg, Fla.: Approximately 350 mollusks from Florida, Bahamas, and Cuba (92453).

ALLEN, C. F. H., Boston, Mass.: 13 specimens of chemicals for the Loeb collection of chemical types (95863).

ALLEN, HAROLD. (See under Miss May L. Allen.)

ALLEN, Dr. H. W., Riverton, N. J.: 2 type specimens of flies (95340).

ALLEN, Mrs. LAURA M., Watertown, N. Y.: 94 specimens of hand-woven fabrics, including an old draft of a design "Flowery Walks," written January 15, 1842, intended to illustrate the evolution of domestic manufactures, collected by the donor from various weavers and persons interested in weaving (93193).

ALLEN, Miss MAY L., and HAROLD ALLEN, Washington, D. C.: Black Chantilly lace fan of the early part of the 19th century, and 2 dresses of the period of the Spanish-American War (94693).

ALLEN, R. A., Washington, D. C.: Moro spear (93381).

ALLEN, WALTER ELWOOD, Washington, D. C.: Specimen of a blue jay from Maryland (90274).

AMERICAN CELLULOSE & CHEMICAL MANUFACTURING CO. (LTD.), New York City: 22 specimens of celanese yarns and fabrics, a sample of a scouring agent for celanese, and 58 specimens of artificial dyestuffs, 21 of them for dyeing celanese, 13 which dye wool, and 24 which dye cotton, but not celanese (93447).

AMERICAN DENTAL ASSOCIATION, Chicago, Ill.: An exhibit emphasizing the importance of oral hygiene (92902).

AMERICAN INSTITUTE OF GRAPHIC ARTS, THE, New York City: "Fifty prints of the Year" (92297, loan).

AMERICAN MACHINE & FOUNDRY CO., Brooklyn, N. Y.: Set of specimens of Indn, a casein plastic, mounted on a wooden tray, consisting of 20 small plaques and fourteen 3-inch pieces of half-inch tubing all in varied colors (95144).

AMERICAN MILITARY ENGINEERS, THE SOCIETY OF, Washington, D. C. (through L. R. Lohr, executive secretary): Medal, bar, button, and ribbon of the Society of American Military Engineers (96259).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City: 2 small mammals from China; cast of a porpoise from Tung Ting Lake, China; 2 bird skins; hair seal from Greenland; 16 specimens of flies; cast and model of the skull of a dinosaur (92808; 93879; 94963; 95102; 95397; 95804, exchange); 7 specimens of Anthidiine bees, representing 5 species, including paratypes of 2 species; 2 crabs; (through Mr. Childs Frick) casts of the lower jaws of a mastodon in the museum at Lyon, France, and of skulls and jaws of 8 smaller mammals (94362, 94553, 95010).

AMERICAN OPTOMETRIC ASSOCIATION, Pittsburgh, Pa. (through Dr. Thomas H. Martin): An exhibit emphasizing the importance of conservation of vision (94545).

AMERICAN PHARMACEUTICAL ASSOCIATION (INC.), Baltimore, Md.: Copy of The National Formulary V (official copy A–7583) for inclusion in the exhibit illustrating the history of the United States medical standards (92406).

AMERICAN PRINTER, THE (through Edmund G. Gress), New York City: 91 mounted inserts showing the "Chronological list of Events in American History," as pictured in the Sesquicentennial number of The American Printer, and 1 copy of The American Printer, July, 1926 (92383).

AMERICAN PROTEIN CORPORATION, Boston, Mass.: 5 specimens of commercial organic derivatives from the edible proteins separated from beef blood (94067).

AMERICAN RAILWAY ASSOCIATION, New York City (through Mr. H. S. Balliet, secretary): A train indicator signal, one of a series

AMERICAN RAILWAY ASSOCIATION—Continued.
being assembled by the American Railway Association to visualize progressive steps in the methods of railway signaling (94712).

AMERICAN TRIPOLI CO., Seneca, Mo.: Specimen of fossil of the order Conularida from Oklahoma (96483).

AMERICAN TYPE FOUNDERS CO., Jersey City, N. J.: Bronze bust of Theodore Low DeVinne by Chester Beach (92434, loan).

AMERINDIAN MUSEUM, THE, Paterson, N. J.: Conch shell wampum material from Passaic, N. J. (92825, exchange).

AMET, E. H., Redondo Beach, Calif.: A small piece of early motion film; a negative, ¾ by 4¼, of a model basin with miniature battle fleet in action and representing one of the earliest utilizations of models in producing full size motion pictures; a news clipping relating to motion pictures from an 1898 paper, and a business card having on the back a cut of the "Magniscope," one of the early forms of motion picture apparatus (94132).

ANDRADE, Dr. E. Navarro de, Rio Claro, Sao Paulo, Brazil, South America: 19 beetles (96494, exchange).

ANONYMOUS: Wasco or Umatilla basket, 2 Tlingit baskets, 3 pairs of beaded moccasins, and a large twined Indian hemp bag made by Umatilla Indians (96443).

ARCHAEOLOGICAL SOCIETY OF WASHINGTON, Washington, D. C.: Pottery vessels and fragments collected by Dr. Manuel Gamio for the society at various localities in Guatemala (88 specimens) (92905, loan); collection of paleolithic stone implements and osseous material from the rock shelter of Castel Merle near Sergeac, Dordogne, France (93150, deposit).

ARCTIC BROTHERHOOD, Camp Nome No. 0, Nome, Alaska (through Dr. A. Hrdlicka): 2 wooden spear throwers, a wooden hook, 2 carved wooden masks, a mounted implement, wooden dance rattle, and part of a fire-making set, from Seward Peninsula, Alaska (92389).

ARKANSAS, UNIVERSITY OF, Fayetteville, Ark. (through David G. Hall): 5 flies (95172).

ARMOUR & CO., Chicago, Ill.: 22 specimens of raw glands and glandular tissues obtained from slaughtered food animals (92838); a series of specimens illustrating stages in the manufacture of soap, including 20 samples of soap making and 9 samples each showing steps in the recovery of glycerin and of fatty acids as valuable by-products (92870).

ARMSTRONG, W. R., Gastonia, N. C.: 2 photographs of an old cotton spinning, carding, and spinning machine owned by the donor; also a specimen of cleaned cottonseed and one of yarn turned out by the machine (91229).

ARNOLD, BENJAMIN WALWORTH. (See under Miss Edith Drury.)

ARROW, GILBERT J. (See under British Government, British Museum (Natural History).

ARSENE, Rev. Brother G., Las Vegas, N. Mex.: 3,035 plants from New Mexico (93472, 96062); 18 plants (95752).

ASSOCIATION FOR STAMP EXHIBITIONS (INC.), THE, New York City: Bronze plaque designed by Emil Fuchs, commemorating the International Philatelic Exhibition, New York, 1926 (94090).

ATKINS, Commander A. K., United States Navy, Charleston Navy Yard, Charleston, S. C.: 30 marine annelids collected by the donor in Cooper River opposite the navy yard (87186).

ATKINSON, Mrs. D. T., San Antonio, Tex.: 15 photographs of cacti (96962, exchange).

ATLANTIC AIRCRAFT CORPORATION, Hasbrouck Heights, N. J.: Descriptive data relating to the

ATLANTIC AIRCRAFT CORPORATION.—Continued.
Fokker F-VII Trimotor air liner, consisting of photographs, bulletins, and blue print (94300).

AUSTEN, Maj. B. E. (See under British Government, British Museum (Natural History).)

AUSTRALIAN MUSEUM, THE, Sydney, Australia (through Frank A. McNeill): 3 specimens of crustaceans, one from Saddleback Island, near Port Denison, and 2 from Capricorn Group (islands), Australia (92497, exchange).

AVERY, Miss MYRA H., Poughkeepsie, N. Y.: Pottery, Roman lamp, and a piece of the wedding dress of a bride who came over in the *Mayflower* (96609).

AYERS, MARSHALL M., Washington, D. C.: A nearly complete male Indian skull found on an island near Duluth, Minn. (93147).

AZTEC CLUB OF 1847, THE, Washington, D. C. (through Col. J. F. Reynolds Landis, United States Army (retired)): Bronze medal commemorating the seventy-fifth anniversary of the founding of the Aztec Club of 1847 (92360).

BABCOCK, G. C., Sonora, Tex.: A small lot of human skeletal remains from a cave near Sonora, and 2 flint implements (91539).

BACON SCHOLARSHIP. (See under Walter Rathbone Bacon scholarship.)

BADGER, H. S., Deland, Fla.: Plant from Florida (95478).

BAILEY, Dr. L. H., Ithaca, N. Y.: Plant from Texas (92429); 2 plants (93492, 95181); 3 photographs and a fragmentary specimen of plant (94108, exchange); 8 specimens and 6 photographs of plants (94498, exchange); plant from Hawaii (95128); 5 plants from California (95344, 95984).
(See also under Ernest B. Braunton.)

BAILEY, Vernon, Washington, D. C.: Plant from Michigan (92222).

BAKER, Prof. C. F., Los Banos, P. I.: 306 moths from the Philippine Islands, containing many novelties (86787).

BAKER, Dr. F. H., Richmond, Victoria, Australia: 17 insects from Australia (94979, 95639); 5 specimens of miscellaneous insects; 9 specimens, 4 species, of marine shells from Australia (95146, 96964, exchange).

BALDINGER, Maj. O. M., United States Army (retired), Marion, Ohio: Collection of buttons of the latter part of the Nineteenth Century (252 specimens) (93176).

BALDWIN BIRD RESEARCH LABORATORY, THE, Gates Mills, Ohio: 20 flies, bird parasites (93278).

BALDWIN, RALPH, Clarendon, Va.: Plant (95385).

BALDWIN, MASTER, Nome, Alaska (through Dr. A. Hrdlička): Approximately 25 specimens, 7 species, of marine shells (93549).

BALL, Dr. C. R. (See under Agriculture, Department of, Bureau of Plant Industry.)

BALL, W. H., Washington, D. C.: Ring-necked duck from the Potomac River (94594).

BALLIET, H. S. (See under American Railway Association, New York City.)

BALLIET, LETSON, Tonopah, Nev.: Crystals of aragonite from a cavern in the Gruepetine Mountains, 16 miles west of Beatty, Nev. (93081).

BALLING, WILLIAM M., San Gabriel, Calif. (through Hoyt S. Gale and W. T. Schaller): Examples of the mineral hernite (96779).

BALTIMORE & OHIO RAILROAD CO., Baltimore, Md.: Bronze medal commemorating the centennial anniversary of the Baltimore & Ohio Railroad Co., 1927 (96775).

BALTZLY, STANLEY M. (See under Miss Lillian M. Fletcher.)

BANKS, NATHAN, Cambridge, Mass. (through Dr. H. G. Dyar): 8 specimens, 5 species, of flies, 3 of which are cotypes of 3 species (93517, exchange).

BARBER, H. S., Washington, D. C.: Decorated battle ax collected by Frank N. Myers in western Tibet in 1911 (94488, loan).

BARBOUR, Dr. THOMAS, Cambridge, Mass.: A remarkable species of wren from Cuba, representing a genus and species new to the Museum collections (96445); bird from Cuba, representing a genus and species new to the Museum collections (96513).

BARCLAY, Capt. HUGH, Rio de Janeiro, Brazil: Collection of gem minerals in rough and cut form (94359).

BARNEY, Mrs. ALICE C., Washington, D. C.: 4 Thirteenth century painted and gilded panels from a chapel in southern France (95363, loan).

BARTLETT, Capt. R. A., New York City: Approximately 770 specimens of marine invertebrates together with algae, echinoderms, mollusks, and fishes from North Greenland (92510).

BARTRAM, Edwin B., Tucson, Ariz.: 64 plants (94957, 95196, 96186).

BARTSCH, Dr. PAUL, Washington, D. C.: 15 birds from Columbia Island, Wash., D. C. (92459); 6 birds from Florida (96209); a large sponge from the beach at Biscayne Bay, Fla. (93390); specimen of a western sandpiper from Washington, D. C. (96498).

BAUMANN, GUSTAVA, Santa Fe, N. Mex.: 63 wood-block prints in color for special exhibition of his work from October 2 to 29, 1926 (92425, loan).

BAXTER, Dr. G. P., Cambridge, Mass.: Specimen of pollucite from Perein S. Dudley dike of pegmatite on Hodgens Hill, 3½ miles southwest of Buckfield, Me. (94101).

BAYER CO., (INC.), THE, Albany, N. Y.: 5 specimens of medicinal substances made official in the United States Pharmacopoeia X (96992).

BEACH, I. T., Ithaca, N. Y.: 9 specimens of chemicals for the Loeb collection of chemical types (96968).

BEALS, Mrs. W. G., Douglas, Ariz.: 67 plants from Arizona (95188).

BRAMER, Prof. R. H. (See under Kansas, University of.)

BEATTIE, Dr. R. KENT, Washington, D. C.: 3 plants from Oregon (97101).

BECK, ELLIS A., Washington, D. C.: Butterfly (92488).

BECKWITH, FRANK, Delta, Utah: 27 specimens of trilobites from the Middle Cambrian of Utah (96926); miscellaneous fossil specimens from Utah (96482).

BEECROFT, W. L., Escondido, Calif.: 7 plants (95875).

BEISLER, Walter H., Princeton, N. J.: 3 specimens of chemicals for the Loeb collection of chemical types (97024).

BELANSKI, C. H., Nora Springs, Iowa: 20 specimens, paratypes and plesiotypes, of Devonian fossils from Iowa (95491).

BELL TELEPHONE LABORATORIES, New York City: 3 cabinets containing 297 specimens of crude gutta-percha and 81 leaf specimens of gutta-percha trees from Dutch East Indies, Malay, and the Philippine Islands (94022).

BENEDICT, Rev. Brother A., Santa Fe, N. Mex.: 189 plants from New Mexico (93221, 93385, 94732).

BENEDICT, Dr. JAMES E., Washington, D. C.: Wood thrush from Maryland (96459).

BENEDICT, JAMES E., jr., Ebden, Md.: Medusa (jelly-fish) collected by the donor at Piney Point, Md. (93196); 12 amphipods, 5 isopods and 5 insects (93294); 3 sponges, approximately 25 bryozoans, 12 marine annelids, 2 isopods, approximately 20 amphipods, 17 shrimps, 22 crabs, 2 shipworms, and 1 mollusk (93389); crab, 2 anemones, and a marine annelid collected in the vicinity of Herring Creek, St. Mary's County, Md. (94378); 4 mollusks (93518); 3 specimens of fiddler crabs collected by the donor at Tall Timbers, Herring Creek, tributary of the Potomac River (93405); 25

BENEDICK, James H., jr.—Continued. specimens of terrestrial isopods collected on the beach at Tall Timbers (96015).

BENN, James. (See under Earl V. Shannon.)

BERGER, Dr. E. W., Gainesville, Fla.: Approximately 15 isopods (96703).

BERRY, Dr. Edward W. (See under Johns Hopkins University.)

BERTHOLF, Mrs. Ellen H., Washington, D. C.: Gold medal awarded by act of Congress, approved June 28, 1902, to Lieut. Ellsworth P. Bertholf, United States Revenue Cutter Service, in recognition of his services in connection with the expedition of 1897–98, for the relief of whaling ships in the Arctic regions (96229, loan).

BETSCH, Chris, Russian Mission, Alaska (through Dr. A. Hrdlicka): 2 wooden vessels inlaid with limestone, a plain wooden vessel, and a bag of soil containing charred wood (96266).

BEVILL, Charles J., Waldron, Ark.: Impressed clay objects found by the donor in a shallow ravine on the farm of Algie Bennett, 2 miles west of Waldron (10 specimens) (94778).

BIELINSKI, R. C. G., Delanco, N. J.: Small bottle, witch doctor's staff, 2 spears, 2 wire arm bands, and a photograph of some idols, all African (96227).

BIRMINGHAM, Pat, Aragon, N. Mex. (through Mr. Rhea Kuykendall): 2 leg bones and portions of 2 skulls of male Indians from Catron County, N. Mex. (96836).

BIRT, Charles E., Ann Arbor, Mich.: Snake from Kansas (96432).

BISHOPP, F. C. (See under Agriculture, Department of, Bureau of Entomology.)

BLAKE, Mrs. Doris H., Washington, D. C.: 537 miscellaneous, undetermined insects from Europe (93585).

BLAKE, Dr. S. F., Washington, D. C.: 17 plants (93009); 2 plants from the western United States (96048).

BLAKE, Dr. S. F.—Continued. (See also under Agriculture, Department of, Bureau of Plant Industry and Field Museum of Natural History, Chicago, Ill.)

BLAKE, Dr. S. F., and Paul C. STANDLEY, Washington, D. C.: 16 plants from New England (93419).

BLERIOT-AERONAUTIQUE, Suresnes (Seine), France: 10 photographs of airplanes made by the company, namely: Spad No. 61, world altitude record (3 photos); Spad No. 51 (2 photos); Spad No. 56 (2 photos); Blériot No. 165 (2 photos); Spad No. 81 (1 photo.); also printed descriptive matter on these planes (96688).

BLISS, Gen. Tasker H., United States Army, Washington, D. C.: Approximately 230 ethnological specimens, 6 boxes of shells, and a large turtle shell from the Philippine Islands (96808).

BLY, Mrs. Charles, Kingman, Ariz.: Plant (loco wood) (96013).

BODEKER, Fr., Cologne, Germany: 2 photographs of plants (93840, 94543, exchange); 3 plants (94711, 95163, exchange); 2 photographs of plants (97000).

BOGUSCH, E. E., Austin, Tex.: 329 plants (96242). (See also under Texas, University of.)

BOLTON, Theodore, Brooklyn, N. Y.: Photograph in color by M. Miley & Son, Lexington, Va., of Charles Willson Peale's oil painting of George Washington (94760).

BOOTH, Dr. E. R., Cincinnati, Ohio (through Dr. Riley D. Moore, Washington, D. C.): 7 pictures for addition to the exhibit of the history of osteopathy in the Museum (92611).

BOSCHMA, H., Leiden, Holland: 3 crabs collected by the donor at Tortugas, Florida (88187).

BOSTON SOCIETY OF NATURAL HISTORY, Boston, Mass. (through C. W. Johnson): 2 flies and 14 moths; 160 specimens of determined Coleoptera and 52 specimens of de-

BOSTON SOCIETY OF NATURAL HISTORY—Continued.
termined bees from Mount Desert, Me. (93568, 94097).

BOTANIC GARDENS, Singapore, Straits Settlements: 84 specimens of ferns, mostly from the Malay Peninsula (94200, exchange).

BOTANICAL INSTITUTE OF MASARYK UNIVERSITY, Brno, Czechoslovakia: 100 specimens of plants (Century H, Flora Exsiccata Reipublicae Bohemicae Slovenicae) (97090, exchange).

BOTANICAL MUSEUM OF UPSALA UNIVERSITY, Upsala, Sweden: 290 plants from Brasil (Regnell collection) (97085, exchange).

BOTANISCHER GARTEN UND MUSEUM, Berlin-Dahlem, Germany: 2 photographs and fragmentary specimen of plant (92774); (through Dr. H. Pilger) fragmentary specimen and 2 photographs of a plant; plant and photograph of a plant (93982, 94720); (through Dr. I. Urban) 2 photographs of type specimens of plants from Cuba (94261); 4 plants from the West Indies (95129); 100 plants from Bolivia (95975). Exchange.

BOURN, W. S., Buzzard Bay, Munden, Va.: Hydroid (92539).

BOVING, Dr. A. G. (See under E. Rosenberg.)

BRABANT, Madame Maurin de (through Mrs. Henry Fairfield Osborn, New York City): Oil painting by W. S. Horton showing General Pershing and the American troops traversing the Place de la Concorde on the occasion of the Victory Fete in Paris, July 14, 1919 (91078).

BRADY, Maurice K., Washington, D. C.: 18 lizards, 4 snakes, and 1 frog from Texas (96376).

BRAMWELL, D., Jamaica, British West Indies: Approximately 1,000 shells from Jamaica (93215).

BRANDT, Lieut. Commander George E., United States Navy, Washington, D. C.: 4 crabs, some brittle stars, and a shell collected by the donor on the beach at Guantanamo Bay, Cuba (92293); sea urchin from Salinas Bay, Nicaragua, and 12 barnacles (96487).

BRANDT, Lieut. Commander George E.—Continued.

BRAUNTON, Ernest B., Los Angeles, Calif. (through Dr. L. H. Bailey): 2 living plants (95154); 3 plants from California (96636, 96451).

BREGUET, Louis, Paris, France: 4 photographs of the "Breguet XIX" airplane which obtained the world's distance record without landing three times during the year 1926; also 3 copies of the Breguet Journal containing accounts of these flights (95061).

BRENTZEL, Prof. W. E., Agricultural College, North Dakota: 6 plants from North Dakota (93291).

BRIDGE, Prof. Josiah, Rolla, Mo.: 15 small collections of invertebrate fossils from the Cambrian rocks of Missouri (93590).

BRIMLEY, C. S., Raleigh, N. C.: Nematode worm belonging to an unidentified species (93228).
(See also under North Carolina Department of Agriculture.)

BRINKMAN, A. H., Craigmyle, Alberta, Canada: 348 plants from Canada (94069).

BRISTOL, UNIVERSITY OF, Bristol, England: 5 specimens representing paratypes of a bryozoan (94494); collection of invertebrate fossils from the Carboniferous of Great Britain (94579).

BRITISH GOVERNMENT:
British Museum (Natural History), London, England: (Through Gilbert J. Arrow) paratype of a leaf beetle (93231); (through Dr. J. Waterston) 6 specimens of hymenopterous parasites, including paratypes of 2 species; 142 specimens of determined bees, representing 117 species, many of them new to the collection (93942, 96904, exchange); (through George T. Prior) slice weighing 88 grains

BRITISH GOVERNMENT—Contd.
of the meteoric stone which fell on January 19, 1865, at Supuhee, Padrauna, Gorakhpur district, United Provinces, India (94089, exchange); (through Maj. E. E. Austen) 15 flies representing 10 species (94106); (through Ward's Natural Science Establishment, Rochester, N. Y.) a nearly complete individual of the meteorite of Hessle, Sweden (91481, exchange); (through L. R. Cox) casts of the holotypes of 7 species of fossil mollusks (94054, exchange); (through N. Burton) 3 fresh-water sponges (94911, exchange); 2 frogs from Tibet (95432, exchange).

Geological Survey of Great Britain, London, England: A series of rock specimens of the chalk of England (93025); series of rocks and minerals illustrating the geology of Mull (94770).

Royal Botanic Gardens, Kew, Surrey, England: 9 fragmentary plants (93212, 95160); fern from Colombia (93936); (through T. A. Sprague) fragmentary plant (94100); 3 cactus seeds (95082); plant (95767); 16 ferns from the Hawaiian Islands (96247). Exchange.

BRITTON, Dr. N. L., New York City: Seeds of a plant from Porto Rico (95681).

BROADWAY, W. B., Port of Spain, Trinidad, British West Indies: 18 plants from Trinidad (93859, 97083).

BROWN, Alfred W., Jr., Chevy Chase, D. C.: 96 specimens, 40 species, of marine shells from the island of Guam (95187).

BROWN, Bolton, New York City: 50 lithographs for special exhibition of his work from April 25 to May 21, 1927 (96406, loan).

BROWN, Edward J., Eustis, Fla.: 5 bird skins from Eustis, Fla., and 3 crabs from Salt Springs, Fla. (93250, 94243).

(See also under B. M. Kinser.)

BROWN, W. L., Washington, D. C.: Bird, yellow-bellied sapsucker, from Virginia, and skull of a moose and skeleton of a reindeer (94727, 96624).

BRYAN, Julian C., Marshall Hall, Md.: Barn owl from Maryland (96793).

BRYANT, Owen, Banff, Alberta, Canada: 2 young toads from Bilby, Alberta, Canada (94960).

BUCHANAN, ESTATES OF MR. AND MRS. ROBERDEAU (through Thomas McKean Meiere, Baltimore, Md., and Paul E. Johnson, Washington, D. C.): Miscellaneous collection of relics owned by the Roberdeau family (12 specimens) (97135).

BUCHER, William F., Washington, D. C.: 2 photographs of cucumber trees in the grounds of the United States Capitol (94575); 7 small specimens of orange wood from Florida (95179).

BUCKINGHAM, Mrs. B. H., Washington, D. C. (See under Miss Isabella C. Freeman.)

BUEHLER, C. A., Knoxville, Tenn.: 14 specimens of chemicals for the Loeb collection of chemical types (97627).

BUENO, J. R. DE LA Torre, White Plains, N. Y.: 5 bugs from Sumatra representing types of 3 species described by the donor (94502).

BUHLIS, Richard, Imboden, Ark.: 90 pearly fresh-water mussels from Randolph and Lawrence Counties, Ark. (94366).

BUNKER, C. D. (See under Kansas, University of.)

BURGESS, J. T., Washington, D. C.: United States cent struck in 1822 (95990).

BURGESS, Thornton W., Washington, D. C.: Flies and a spider (93422).

BURKENROAD, Martin, New Orleans, La.: Moth from Louisiana (95655).

BURR, J. H. Ten Eyck, Casenovia, N. Y.: 2 specimens of the mineral holmquistite from Uto, Sweden (94947).

BURT, Charles E., Manhattan, Kans.: 22 amphibians and 2 reptiles from Kansas (96462, 96482).

(See also under Kansas State Agricultural College.)

BURTON, N. (See under British Government, British Museum (Natural History).)

BUSCK, Account, Washington, D. C.: Six-lined race-runner lizard from Terra Cotta, Washington, D. C. (97097).

BUSH, B. F., Courtney, Mo.: 11 plants from Missouri and Kansas (96239, 96281); plant (96491).

BUSH, J. S., Aetna, Kans.: Small collection of fossil teeth and fragmentary bones from Oklahoma (96475).

BUSH-BROWN, Henry K., Washington, D. C.: Portrait busts and statuettes by the donor (96784).

BUSHNELL, Mrs. Belle, Washington, D. C.: White linen towel with damask pattern, woven by hand, about 1825, by nuns in Italy (95008).

BUSHNELL, D. I., Washington, D. C.: Fragmentary soapstone pots collected by the donor in Virginia (96471); piece of tuckahoe, or Indian bread, and 12 old iron tools all from Virginia (93500, 94561); 56 stone implements from various localities (93521); chipped stone implements and stone and clay pipes collected by the donor in Todd County, Ky., and St. Louis County, Mo. (96521).

(See also under H. N. Covell.)

BUTLER, Capt. C. S., Burado post office, Port au Prince, Haiti: 35 fossil mollusks from Thomonde Mountain, Haiti (96923).

BUTTS, Charles. (See under J. B. Hoover.)

BUXTON, Dr. P. A. (See under London School of Hygiene and Tropical Medicine.)

CALDERON, Señor Dr. Salvador. (See under Salvador, Government of, Direccion General de Agricultura.)

CALIFORNIA ACADEMY OF SCIENCES, San Francisco, Calif.: 24 plants (94402, exchange); 7 fossil crabs (94774); fly (96338); (through Mr. Charles L. Fox) 25 specimens of aculeate Hymenoptera, including paratypes of 4 species (96444, exchange).

(See also under Navy Department Washington, D. C.).

CALIFORNIA CITRUS EXPERIMENT STATION, Riverside, Calif. (through P. H. Timberlake): 18 specimens of parasitic Hymenoptera, being types of 8 species described by Kamal (94978).

CALIFORNIA, UNIVERSITY OF, Berkeley, Calif.: 16 specimens of fossil crab material (93578); (through Prof. N. L. Gardner) 2 fragmentary specimens of plants (92610, exchange), 125 plants (94784, exchange), 144 photographs, chiefly representing type specimens of plants in European herbaria (95155, exchange); (through H. E. Parks) 106 specimens of ferns from Fiji and Tonga (93661); (through Prof. R. C. Essig) 4 specimens of larvae of flies, and 2 trapdoor spiders (94203, 94222); 8 ferns from Tonga (94760, exchange); (through Harold Compere) 17 chalcid flies representing 6 species, 4 of which are represented by paratypes (95674); (through Prof. P. B. Kennedy) 116 plants from Sonora, Mexico (96879); (through W. B. Herms) approximately 100 specimens of flies from California (96642).

CAMPBELL, Stewart, Boise, Idaho: Miscellaneous ore specimens from Blaine and Custer Counties, Idaho (93624).

CAMPOS R., Prof. F., Guayaquil, Ecuador: 7 specimens of flies from South America (94124).

CANADIAN GOVERNMENT:

Department of Agriculture, Entomological Branch, Ottawa, Canada (through C. Howard Curran); 13 specimens of flies, rep-

CANADIAN GOVERNMENT—Contd.
resenting 7 species, of which 6 specimens are paratypes; 4 flies (93414, 94933, 95040, exchange); 18 specimens of flies, representing 7 species, 5 of which are represented by paratypes (93917).

CANFIELD, FREDERICK A. (through Alfred Elmer Mills and Edward K. Mills, executors, Morristown, N. J.): Collection of minerals, meteorites, photoplates of minerals and catalogues of the collection (93023, bequest).

CANU, FERDINAND, Versailles, France: Approximately 100,000 specimens of Mesozoic and Cenozoic fossils from France (93034).

CARNEGIE INSTITUTION OF WASHINGTON, Washington, D. C.: Photograph of Andrew Carnegie (94701).

Coastal Laboratory, Carmel, Calif. (through Dr. D. T. MacDougal, Director): 5 plants (92529, 92558, 92780).

Desert Botanical Laboratory, Tucson, Ariz.: 112 plants collected in Sonora by Dr. Forrest Shreve and Miss Frances Long (92487); 2 photographs of cactus plants (92773).

CARR, F. S., Medicine Hat, Alberta, Canada: 2 flies, 1 being the paratype of a new species (95850).

CARSON, Dr. C. M. (See under Goodyear Tire & Rubber Co.)

CARTWRIGHT, OSCAR L., Oswego, S. C.: 22 beetles representing 5 species (95942).

CARTY, A. B., Washington, D. C.: Copy of the Miami Daily News of July 28, 1925, comprising 504 pages and weighing 8 pounds (93591, loan).

(See also under Electro-Tint Engraving Co., Henning Sales Agency, and Zinc-Oid Printing Plate Corporation.)

CASEY, Mrs. LAURA WELSH, Washington, D. C.: A Zulu assagai from South Africa, secured by the transit of Venus expedition under Prof. Simon Newcomb, and an egg cooker with alcohol lamp, from Philadelphia, Pa., about 40 years old (94515).

CAUM, EDWARD L., Honolulu, Hawaii: 10 specimens of the Laysan rail (93209); 4 eggs of the Laysan rail, and 7 eggs (with fragments of 6 others) of the blue-throated quail (93601).

CHAMBERLAIN, Prof. CHARLES J., Chicago, Ill.: Plant (95120); 3 specimens and 2 photographs of plants (95523, exchange).

(See also under Chicago, University of.)

CHAMBERLAIN FUND, FRANCES LEA, Smithsonian Institution: Miscellaneous cut gems and gem minerals (93272); tourmaline beads, pendants of aventurine quartz, and 3 carved objects (93290); 4 bowls cut from serpentine (93380); cut gems and carved objects (19 specimens) (93387); 8 cut gems, beryl, phenacite, and tourmaline (93398); a small pink diamond (93427); miscellaneous cut stones and beads (93528); a series of rough and cut synthetic precious stones (93540); an agate tray (93596); natural crystal of spodumene and a cut gem of spodumene (94211); 2 diamond crystals in the matrix from Brazil (95538); pendant of clouded amber (96079); yellow sapphire weighing 25.28 carats (96282); 2 strings of beads of amber from the Baltic Sea, and 3 polished pieces of Sicilian amber (96304).

CHAMBERLIN, T. S., Chicago, Ill.: Copy of the March, 1927, issue of Medical Life, which contains historical articles concerning the discoveries of Dr. Samuel Guthrie (96862).

CHAMBERS, BERT C. (See under Aldus Printers (Inc.), The.)

CHAMBERS, Mrs. C. L., Bethesda, Md.: China plate decorated with the flags of the nations allied with the United States during the World War (96776).

CHAMPLAIN, A. B., Harrisburg, Pa.: 68 specimens of miscellaneous determined New Zealand beetles, representing 29 species (92447). (See also under Pennsylvania Department of Agriculture).

CHAPIN, Dr. E. A., Washington, D. C.: 121 alcoholic lots and 398 slides of ectoparasites of the orders Mallophaga, Siphonaptera, Acarina, and pseudo-scorpions (93609).

CHAPMAN, Rev. JOHN W., Anvik, Alaska: 25 photographs of natives of Alaska (93167).

CHASE, Mrs. AGNES, Washington, D. C.: 6 plants from Austria (93526). (See also under Agriculture, Department of, Bureau of Plant Industry, and Deogracias V. Villadolid.)

CHASE, Dr. WILL, Cordova, Alaska (through Dr. A. Hrdlicka): A complete skull, apparently of an Eskimo, found in a cave on an island in Prince William Sound, Alaska (93262).

CHAUVENET, S. H., Philadelphia, Pa.: Collection of tin ores and concentrates from Franklin mines, 17 miles north of El Paso, Tex (94121).

CHAVES, Señor Don DIOCLECIANO, Managua, Nicaragua: 77 plants from Nicaragua (94086).

CHIAO, C. Y. (See under Nanking, University of.)

CHICAGO, UNIVERSITY OF, Department of Botany, Chicago, Ill. (through Prof. Charles J. Chamberlain): 15 seeds of plants (96961, exchange).

CHRISTENSON, Miss E. C., Washington, D. C.: Mounted canary (96656).

CLARK, A. B. J., Washington, D. C.: A rare butterfly (92506).

CLARK, AUSTIN H., Washington, D. C.: 2 rare butterflies (92794).

CLARK, B. PIERCE, Boston, Mass.: Moth from Arizona (94988).

CLARK, Dr. F. C., Santa Monica, Calif.: Approximately 300 specimens of fossil crustacea from California (96044).

CLARK, Mrs. MARIAN BRUCE, Washington, D. C.: Porcelain copy of The Worcester Jug (95757).

CLARK, ROBERT STERLING, New York City (through Arthur deC. Sowerby): 10 mammals and 247 birds from China (96280).

CLARKE, Miss MILDRED H., Chevy Chase, D. C.: A wrap of the latter part of the nineteenth century (93516).

CLAUDE JOSEPH, Rev. Brother, Temuco, Chile: 768 plants from Chile (93918, 94283, 95658).

CLAY, Dr. T. S., Savannah, Ga. (through Capt. James J. Pirtle, United States Army): Fish (92634).

CLEMENT, Rev. Brother, Santiago de Cuba: 47 ferns from Cuba (97094).

CLEMENTS, J. MORGAN, Papeete, Society Islands: A fruit-bat from Mangaia Island, Cook Islands, and a collection of insects, shells, and a lizard (92810).

CLEMSON AGRICULTURAL COLLEGE, Clemson College, S. C. (through John O. Pepper): 5 flies from South Carolina (95584, 95167, 95800); 2 wasps, the type and paratype of a new species (95879).

CLEVELAND PHOTOGRAPHIC SOCIETY, Cleveland, Ohio: 127 pictorial photographs for special exhibition from June 15 to July 31, 1927 (94788, loan).

CLINTON, H. G., Manhattan, Nev.: Collection of gold ores from the Lother Lode, California, and miscellaneous mineral specimens (94353); minerals and fossils from the so-called "Petrified Forest" west of Fish Lake Valley, Esmeralda County, Nev. (94354); 4 specimens of realgar and orpiment (95642).

COBLENTZ, W. W., Washington, D. C.: A small collection of insects (30 specimens) from Sumatra (92815).

COCHRAN, Miss DORIS M., Washington, D. C.: 12 fishes (95517).

COCKERELL, Prof. T. D. A., Boulder, Col.: 40 specimens of bees representing types of 40 species (93570); 102 insects, including holotypes of 38 species of bees, paratype of 1 bee,

COCKERELL, Prof. T. D. A.—Contd. paratype of 1 moth, and holotype of a fly (93519); young toad from Colorado (93594); 23 insects, including holotypes of 18 species of bees, a coccid, and a dipteron (93943); 26 insects, including types of 19 species of bees (94207, exchange); 125 specimens of miscellaneous insects, including 5 specimens of determined bees (94558); 89 insects, including types of 33 species, mostly bees (95136); 169 specimens of bees of the subfamily Halictinae, including 2 determined species (95532); 81 insects, including 16 specimens of named bees, representing 15 species, one of which is represented by a paratype (95979); 76 unidentified specimens of miscellaneous Hymenoptera (96207); 81 miscellaneous insects, including 7 named species, 5 of which are represented by type material (96450); 213 miscellaneous insects, consisting of determined, undetermined, and unmounted material, including 9 types of determined bees, representing 8 species (96934); 141 miscellaneous, undetermined (mounted and unmounted) insects; also 5 slugs (97064).

(See also under Elven C. Nelson.)

CODY, M. D., Gainesville, Fla.: Plant from Florida (96621).

COFFIN, C. A., New York City (through Dr. C. D. Walcott): Portrait by Miss Rebecca Smith of the Tewa Indian "Big John" (Pho qui tah) from the pueblo of San Juan, N. Mex. (94369).

COFFROTH, James W., San Diego, Calif.: Book entitled "An Appreciation of James Wood Coffroth" by Edward F. O'Day, printed by John Henry Nash in 1926 (93957).

COKER, Dr. R. E., Chapel Hill, N. C.: Plankton material from Lake James, N. C. (96634).

COLEGIO BIFFI, Barranquilla, Colombia (through Rev. Brother Rafael, Director): 53 plants collected in Colombia (96488); 27 plants (96971).

COLLINS, Prof. J. Franklin, Providence, R. I.: 13 specimens of grasses from New England (93597).

COLLOM, Mrs. W. B., Payson, Ariz.: 4 plants from Arizona (92426); 4 plants (96586, 96860).

COLOMBO MUSEUM, Colombo, Ceylon: 94 bird skins from Ceylon (89150, exchange).

COMMERCE, DEPARTMENT OF:

Bureau of Fisheries: 300 sea urchins of the family Cidaridae identified by Dr. Th. Mortensen of the Zoological Museum, Copenhagen, Denmark (85966); 76 bottles of plankton taken on the Albatross-Philippine Expedition, 1907-1910 (93189); 66 lots of Euphausiacea and Mysidacea from the Western Atlantic collected by the steamer *Bache* in 1914, also 4 plankton samples taken by the *Bache* in 1914 (93288, 94006); 214 bottles of plankton taken by the schooner *Grampus* cruises of 1912-1913 (93405); 3 specimens of Whitefishes, types of subspecies (95555); collection of insects, shells, sand dollars, bird nest and eggs, crinoids, and miscellaneous specimens (alcoholic) collected by G. Dallas Hanna on St. George Island, Alaska (96735); 331 fishes and 2 turtles (96615); 3 type specimens of fishes from Greenwood, Miss. (96790); type specimen of a fish collected at Crisfield, Md., September 15, 1921, by William C. Schroeder (96873).

Bureau of Mines. (See under Frank Sansom.)

Bureau of Standards: The first Liberty engine (94179).

Patent Office: A collection of original models of patented inventions (89797); 14 models of torches, lamps, whaling implements, and musical instruments (94380).

COMPANIA DE PETROLEO "EL AGUILA" S. A., Vera Cruz, Mexico (through Dr. O. P. Hay): Fragmentary lower jaws with incomplete teeth of a mastodon from 5 miles northwest of Macuspana, Tobasco, Mexico (94090).

COMPERE, HAROLD. (See under California, University of.)

CONARD Prof. Hiram S. (See under Grinnell College.)

CONVERSE, A. W., Palmer, Mass.: Maori wood carving of a supernatural being (94972).

CONZATTI, Prof. C., Oaxaca, Mexico: 30 plants from Mexico (96364).

COOK, Dr. E. FULLERTON. (See under United States Pharmacopoeial Convention, The.)

COOK, Miss FANNYE A., Crystal Springs, Miss.: 2 specimens of the painted bunting from Louisiana (92562).

COOK, Prof. O. F. (See under Agriculture, Department of, Bureau of Plant Industry.)

COOLIDGE, Mrs. CALVIN, The White House, Washington, D. C.: White satin brocade evening gown with accessories and a fraternity pin worn by Mrs. Grace Goodhue Coolidge during the administration of her husband, President Calvin Coolidge, 1924 (93081).

CORDRAY, JAMES M., Harrington, Del.: Stone ax found on the Cordray farm near Harrington, Del., about 250 years ago (97110).

CORNELL UNIVERSITY, Ithaca, N. Y. (through Prof. Robert Matheson): Fly collected at Carey, Idaho (93498).

CORNWELL, RALPH T. K., Ithaca, N. Y.: 4 specimens of chemicals for the Loeb Collection of Chemical Types (97031).

COSINE, Miss FRANCES M., Suffern, N. Y.: 40 surgical appliances and instruments owned prior to 1871 by Dr. Enoch T. Winter, grandfather of the donor (95819).

COVELL, H. N., Schuyler, Va. (through D. I. Bushnell): 2 large fragments of soapstone pots from Virginia (94709).

COVILLE, Dr. FREDERICK V., Washington, D. C.: 20 plants (hepatics) from central New York (94785).

(See also under Agriculture, Department of, Bureau of Plant Industry.)

COX, E. R. (See under British Government, British Museum (Natural History).)

CRANE, Mrs. J. C., University, Miss.: 56 paper dolls in colors depicting the natives of Korea (96796).

CRAWFORD, J. C., Raleigh, N. C.: 7 specimens of determined bees, types of 4 species (96557, exchange).

(See also under North Carolina Department of Agriculture.)

CRIMMINS, JOHN, Vallejo, Calif.: Fossil leaf in diatomaceous earth from near Knights Ferry, Stanislaus County, Calif. (94959).

CROFFUT, Mrs. W. A., Washington, D. C.: Woven bag from the Nahuatl Indians of N. Mex., and 9 small purses of Mexican make collected in Mexico in 1848 by Gen. Ethan Allen Hitchcock (96590).

CROMPTON, GEORGE, Worcester, Mass.: Original patent model of the first power loom for weaving fancy figured fabrics, invented by William Crompton, grandfather of the donor, United States Patent No. 491, issued November 25, 1837 (96804).

CURRAN, C. HOWARD. (See under Canadian Government, Department of Agriculture, Entomological Branch.)

CZERNY, ADT LEANDER, Kremsmunster, Oberoesterreich, Austria: Collection of identified flies, comprising 120 specimens, 55 species, including 4 cotypes of 2 species (92702, exchange).

DADANT, C. P. & Sons. (See under A. I. Root Co.)

DALL, Dr. W. H., Washington, D. C.: Package of "Ao-nori" green algae prepared for food, from Japan (95105).

(See also under Mrs. W. H. Rehnaur.)

DAMPF, Alf, Mexico, Mexico: 30 specimens of flies (93260).

DANSKE ARTISKE STATION, Disko, Greenland: 481 plants (93781, 97184). Exchange.

DARLINGTON, P. J., Boston, Mass.: 5 specimens, paratypes of 4 new species of beetles (96396, exchange).

DAVIDSON, Dr. A., Los Angeles, Calif.: 3 plants (93226, 93416).

DAVIS, Arthur G., London, England: Approximately 2,000 specimens of Cretaceous and Tertiary fossils from England (94280).

DAVIS, Prof. Bradley M., Ann Arbor, Mich.: 3 plants from Jamaica (93654).

DAVIS, Earl J., Detroit, Mich.: Fragments of pottery from Michigan (92807).

DAVIS, Frank C., Glendale, Calif.: 3 plants (94248, exchange).

DAVIS, Prof. J. J. (See under Purdue University.)

DAVIS, Miss Margaretta, Princeton, Mass.: Electrotype of a child's arm made in 1847 by Daniel Davis of Boston; 2 leaves of a japonica, one whole with leaf inside, and the other open showing the leaf inside; stem of the japonica flower, and a copy of a daguerreotype of Daniel Davis taken about 1845 (92493).

DAVY, Dr. J. Buisr. (See under Imperial Forestry Institute.)

DEAN, F. A. W., Alliance, Ohio: 4 starfishes from western Australia, and 22 specimens, 10 species of shells from Curaçao (94598, 95194).

DEANE, Ruthven, Chicago, Ill.: A small photograph of S. B. Meek (96177).

DEANE, Walter, Cambridge, Mass. (through C. A. Weatherby): 140 plants collected in the eastern United States by J. R. Churchill (96404).

DEGENER, Otto, Honolulu, Hawaii: 15 plants from the Hawaiian Islands (95631).

DEINARD, E., New York City: 8 objects of Jewish religious art and 15 coins; collection of Jewish religious ceremonial objects (93631, 94703, 95111). Loan.

DELACOUR, Jean, Seine Inférieure, France: Skin of a bird (93212, exchange).

DEWEY, L. H. (See under Agriculture, Department of, Bureau of Plant Industry.)

DIRECCION DE PASEOS PUBLICOS, Montevideo (Prado), Uruguay (through Luis Guillot): 6 specimens of cacti (96627, exchange).

DIXIE COLLEGE, THE, St. George, Utah (through A. M. Woodbury): 10 specimens of flies (94560, 96063).

DODD, A. P., Sherwood, Brisbane, Australia: 27 specimens of parasitic Hymenoptera, representing 24 species, from Australia (94753, exchange).

DOZIER, H. L., Newark, Del.: 15 specimens of Homoptera, types of 9 species described by the donor (95410).

DRAKE, Dr. Carl J., Ames, Iowa: 21 specimens of Hemiptera, including a paratype of 1 species (93929).

DRURY, Miss Edith, Concord, N. H. (through Benjamin Walworth Arnold): A four-rayed sand-dollar (93469).

DuBOIS, Gaston, B., Washington, D. C.: Man's coat, 2 pairs of men's leggings, and one girl's legging, all of deer skins, collected by Capt. Richard C. DuBois, United States Army, near Yuma, Ariz., from 1870–1874 (96415).

DUNBAR, Dr. Carl O. (See under Yale University, Peabody Museum of Natural History.)

DURY, Charles, Cincinnati, Ohio: 7 beetles (92836).

DUVAL, Hugh H., Bastrop, Tex.: 3 plants (93533).

DYAR, Dr. Harrison G., Washington, D. C.: 750 specimens of two-winged flies from the Northwest (96202); 5,964 specimens of mosquitoes collected by the donor in Glacier National Park (96412); 735 specimens of flies, all collected by the donor from Glacier National Park (96965). (See also under Nathan Banks, and Dr. M. Nunez-Tovar.)

DYKE, A. L., St. Louis, Mo.: Early type of float-feed carburetor (87698).

EARLE, Charles T., Bradenton, Fla.: Ring-necked snake, 2 snakes and a lizard from Florida (96206, 96308).

EAST, C. S. (See under E. D. Reid.)

EDWARDS, H. T., Washington, D. C.: 3 specimens, 2 species, of land shells from hills near Guara, in the vicinity of Nipe Bay, Cuba (92475).

EGBERTS, W. H., Washington, D. C.: Skull of a white man (90092, exchange).

EICHORN, ALVIN S., Cleveland, Ohio: 2 shrimps (90251).

EIMER & AMEND, New York City: Specimen of phenolsulphonphthaleinum, a medicinal substance made official in the United States Pharmacopeia X (93282).

ELECTRO-TINT ENGRAVING CO., Philadelphia, Pa. (through A. B. Carty, Washington, D. C.): 4 large specimens of four color halftones (90426).

ENDO, RINJI, Fu-Shun Middle School, Manchuria, China: Approximately 200 specimens of invertebrate fossils from Manchuria (92413).

EPLING, CARL, Los Angeles, Calif.: 13 ferns from Idaho (90183, 90284).

ERLANGER, BLUMGART & CO. (INC.), N., New York City: 14 specimens of cotton dress goods fast to sun and washing (93377).

ERNST, Mrs. HAROLD C., Jamaica Plain, Mass.: An old Japanese clock, with movable hours; Japanese leveling apparatus with movable Japanese hours, and an old Japanese wall clock, descending weight, indicating Japanese hours, collected by Prof. Harold C. Ernst (94370).

ESHNAUR, Mrs. W. H., Bellflower, Calif. (through Dr. W. H. Dall): 5 specimens, 2 species, of land and fresh-water shells and 3 specimens of insects from Bellflower, Calif. (93548).

ESPANOPOULOS, MICHAEL J., Washington, D. C.: 2 pottery lamps found near the Acropolis, Athens, Greece (92536).

ESPOSITO, LOUIS, Jr., Brooklyn, N. Y.: 3 dry sponges collected at Jupiter Beach, Jupiter, Fla. (93700).

ESSIG, Prof. E. O. (See under California, University of.)

ESTACION FORESTAL, Vera Cruz, Mexico (through Prof. Ferd. Mawcinitt): 1 specimens of insects from the vicinity of Vera Cruz (94054).

ETHERIDGE, ISAAC, Virginia Beach, Va.: Snowy owl from Virginia (93371).

EVANS, Mrs. ADA, St. Michaels, Alaska (through Dr. A. Hrdlicka): 5 photographs of natives and scenes in Alaska (92806).

EVANS, A. H., Cambridge, England: 4 eggs of 3 species of petrels from the Bermudez Islands and New Zealand (90304, exchange).

EVANS, Miss A. M., Liverpool, England: 3 specimens of mosquitoes (93145, exchange).

EVANS, H. W., Washington, D. C.: 3 mounted fish skins (94096).

EVANS, VICTOR J., Washington, D. C.: 3 birds, 2 of them silver-beaked tanagers, and the other a golden white-cheeked plantain eater (92421); barred upland goose (92627); skeleton of a crowned pigeon (93294); Nicobar pigeon (93947); dorcas gazelle (94073); black-necked stork (93620).

EVENING STAR NEWSPAPER CO., Washington, D. C.: Bald eagle about 3 years old, from Occoquan, Va. (94077).

EWING, Dr. H. E., Washington, D. C.: Frog and snake from Texas, and a lizard from Arizona (90016).

EYERDAM, WALTER J., Seattle, Wash.: 75 mollusks from Illinois and Washington, and 98 marine shells from Washington (90389).

FAIRCHILD, GRAHAM, Washington, D. C.: Approximately 100 specimens of land mollusks from Morocco; also insects from Morocco and other localities (90000).

FANKHAUSER, Miss ROSE E., Utica, N. Y. (through Miss L. C. Foucher): Battak manuscript written on palm spathe, collected by the donor in Sumatra, Dutch East Indies (90660).

FARMAN, Henry and Maurice, Billancourt (Seine), France: 14 photographs of Farman airplanes which have established various world records, also a printed booklet of descriptive matter about the planes and a typewritten list of records and prices for Farman motors and airplanes (95600).

FAUNTLEROY, Col. P. C., United States Army, Washington, D. C.: 8 stone implements from two sites in King George County, Va.: (94500).

FAZ, Alfonso, Santiago, Chile: Collection of Diptera (57 specimens), and 8 plants (92816, 95764).

FELIPPONE, Dr. Florentino, Montevideo, Uruguay: 32 butterflies; 11 shells from Brazil and Uruguay, and 17 species of marine and land shells from Brazil, Uruguay and Argentina (92402, 93254, 93368).

FELT, Dr. E. P. (See under New York State Museum.)

FENNER, Dr. C. N., Washington, D. C.: A partly articulated reptilian fossil from Clifton, Passaic County, N. J. (95892).

FERRIS, Jean Leon Gerome, Philidelphia, Pa.: 63 copper plates etched by Stephen J. Ferris; also 2,241 prints, etchings, engravings, mezzotints, lithographs, etc. (94830).

FERRIS, Mrs. Roxana S. (See under Stanford University, Stanford University, Calif.)

FIELD MUSEUM OF NATURAL HISTORY, Chicago, Ill.: Photograph of a plant (96280, exchange); (through Dr. S. F. Blake) 9 plants from Peru (96630, exchange).

FISHER, A. G., Valona, Ga.: Skull of a porpoise from Wolf Island beach (92182).

FISHER, George L., Houston, Tex.: 34 plants from South Africa (92782); 277 plants from Mexico and Texas (93528, 93588).

FLAGG, Mrs. Grace L., Takoma, D. C.: Plant from Virginia (92430); young migrant shrike (92449).

FLEISHER, INC., B. B. & H. W., Philadelphia, Pa.: 21 balls of worsted yarn and 10 finished articles crocheted or knitted therefrom, and a series of 9 specimens showing the making of a hooked rug (96758).

FLETCHER, Miss Lillian M., Los Angeles, Calif. (through Stanley M. Baltzly): A Fletchertype print and 14 Fletchertype paper negatives made by Abel Fletcher, father of the donor, about 1845, at Massillon, Ohio (96120).

FOERSTE, Dr. A. F., Dayton, Ohio: 12 specimens of Cambrian fossils from east of the Hudson River at Troy, N. Y. (94110).

FOLSOM, Dr. J. W., Tallulah, La.: Plant from Mississippi (93241); 131 specimens of insects of the subclass Apterygota (93041).

FOSHAG, Dr. W. F., Washington, D. C.: 2 described specimens of the mineral okenite from Crestmore, Calif. (96009).

FOSTER, John G., Atlanta, Ga.: 2 insects (termites) (92415).

FOUCHER, Miss L. C. (See under Miss Rose E. Frankhauser.)

FOWLER, Dr. Henry W. (See under Academy of Natural Sciences, Philadelphia, Pa.)

FOX, Dr. Carroll (See under Treasury Department, Public Health Service.)

FOX, Charles L. (See under California Academy of Sciences.)

FRACHON, Jean, Ardeche, France: Volume entitled "Joseph et Etienne de Montgolfier," a fine example of paper making, printing, and book illustrating (93420).

FRAZER, Mrs. James C. (See under National Society of Colonial Dames of America.)

FREEMAN, Miss Isabella C. and Mrs. B. H. Buckingham, Washington, D. C.: 20 ethnological specimens, 15 pieces of lace, 26 silk scarfs, and a small collection of historical specimens (96010).

FREEMAN, MALCOLM, Washington, D. C.: King rail from Washington, D. C. (96470).

FREEMAN, O. M., Washington, D. C.: Plant from Virginia (96570).

(See also under Agriculture, Department of, Bureau of Plant Industry.)

FREER GALLERY OF ART. (See under Peking, China.)

FRENCH, H. E., Columbia, Mo.: 50 specimens of chemicals for the Loeb collection of chemical types (96223).

FRIC, A. V., Prague, Czechoslovakia: 8 photographs of plants (94552); 4 plants (96409).

FRICK, CHILDS, New York City. (See under American Museum of Natural History, New York City.)

FRIEDMAN, E. G., Brownsville, Tex.: 2 specimens of insects from Texas and Mexico (93271).

FRIERSON, L. S., Gayle, La.: Turtle from Louisiana (91714).

FRISON, Dr. T. H. (See under Illinois State Natural History Survey Division, Urbana, Ill.)

FROST, S. W., Arendtsville, Pa.: 5 files, types of 3 species (96245).

FUSCO, SALVATORE, Baltimore, Md. (through Salvatore Scalco, Washington, D. C.): Highly ornamented bridle used in the old horse races in Palermo, Sicily (96276).

GAHAN, A. B. (See under S. Nowicky.)

GALE, HOYT S. (See under William M. Balling.)

GANDER, FRANK F., San Diego, Calif.: 6 specimens of crayfish, juvenile, hatched in an aquarium from specimens taken from a pool in the Escondido River, near Escondido, Calif. (93197).

GANGE, LOUIS DE, Port-of-Spain, Trinidad, British West Indies: A small collection of feather mites (2 slides) from Trinidad (94755).

GARBER, Mrs. MARGARET R., Washington, D. C.: A print of Lowe's Civil War balloon, illustrating the first use of aircraft in warfare by the United States (94365).

GARBER, PAUL E., Washington, D. C.: Small specimen of dogame lancewood (93296).

GARDNER, Dr. JULIA, Washington, D. C.: 25 specimens, 4 species, of fresh water shells from Texas (95519).

GARDNER, Prof. N. L. (See under California, University of, Department of Botany.)

GATES, Rev. SEBASTIAN, Grenada, British West Indies: 6 insects (93182); parasitic isopod from Carriacou, British West Indies (93423).

GAVIN, JAMES and CHESTER, Jr., Fort Gaines, Ga.: Bannerstone or amulet from near Fort Gaines (96783).

GEE, Dr. N. GIST, Peking, China: 45 specimens of miscellaneous insects from China (88849).

GEISER, Prof. S. W., Dallas, Tex.: 46 insects and 7 isopods (92828, 96640).

GEIST, OTTO W., Fairbanks, Alaska: Collection of plants from St. Michaels Island and the vicinity of Nome, Alaska (96919).

GEORGIA STATE GEOLOGICAL SURVEY, Atlanta, Ga. (through B. W. McCallie, State Geologist): Fragment of Social Circle meteorite, Georgia (94213).

GERRARD, E. B., Hill, N. Mex.: Portion of the skull of an adult male Indian (94802).

GIBSON, Miss MARY, Washington, D. C.: Young starling (96701).

GILL, Mrs. GEORGE B. (See under Thomas Tapscott Gill.)

GILL, THOMAS TAPSCOTT (through Mrs. George B. Gill, Little Rock, Ark.): Miniature plaster bust of Grover Cleveland, designed by A. Pedro Flaquepagne, of Mexico, in 1892 (96826).

GILLESPIE, JOHN W., Stanford University, Calif.: 30 plants from Panama (92484).

GILMAN, M. FRENCH, Banning, Calif.: 7 plants (95348, 96780); 26 plants from Arizona (96546, 96695); 5 ferns (96841); 2 plants from California (97002).

GIRTY, George H., Washington, D. C.: Approximately 2,000 marine shells from Barbados (92405).

GLAFCKE, L. B., Soldier Summit, Utah (through Victor C. Heikes): 5 specimens of refined natural wax made from ozokerite (96901).

GLASGOW, Hugh. (See under New York State Agricultural Experiment Station.)

GLENN, L. C., Nashville, Tenn.: 10 pieces of clay containing 2 species of fresh-water fossil mollusks from Kentucky (96928).

GLUCK, Prof. Dr. Hugo, Heidelberg, Germany: 75 specimens of plants from Europe (96222, exchange).

GOLDMAN, Marcus I., Washington, D. C.: 5 geologic specimens collected in Europe (93841).

GONGGRIJP, J. R. C., Clevia Estate, Dutch Guiana: 2 species of isopods, and 17 specimens of shipworms from Surinam River and a sample of Alata wood attacked by shipworms (90067).

GOODMAN, Henry J., Sarasota, Fla.: 2 plants (96007).

GOODYEAR TIRE & RUBBER COMPANY, THE, Akron, Ohio (through Dr. C. M. Carson): 16 specimens of chemicals for the Loeb Collection of Chemical types (94916).

GORGAS, Mrs. William C., Washington, D. C.: Collection of personal relics, medals, and badges of the late Maj. Gen. William Crawford Gorgas, United States Army (92941); collection of military uniforms, commissions, diplomas, etc., of Maj. Gen. W. C. Gorgas, Surgeon-General of the United States Army during the World War (92817). Loan.

GOSSWEILER, J., Loanda, Angola, Portuguese East Africa: 107 specimens of plants from Africa (95000).

GRAGG, Mrs. Hannah, San Luis Obispo, Calif.: Fern from California (96389).

GRAHAM, Rev. David C., Suifu, China: 275 insects, 2 eels, a fossil crab, 8 quarts crystals, 22 snakes, 16 frogs, 6 lizards, 13 salamanders, 21 tadpoles, 16 birds, 6 mammal skulls and skins, 24 invertebrates and approximately 100 mollusks (91536); reptiles, mammal skins and bones, and 7 bird skins (90448).

GRAHAM, Mrs. Henry, Aragon, N. Mex. (through Rhea Kuykendall). Complete male skull from Catron County, N. Mex. (93621).

GRANT, J. M., Marysville, Wash.: 16 plants, chiefly grasses (93143).

GREENE, C. T. (See under George M. Greene.)

GREENE, Frank C., Tulsa, Okla.: 2 plants from Oklahoma, and 2 photographs (92966); fern from Oklahoma (94532).

GREENE, George M., Harrisburg, Pa. (through C. T. Greene): 200 beetles from Germany, Japan, and the United States (94095).

GREENMAN, Dr. J. M. (See under Wistar Institute of Anatomy and Biology.)

GRESS, Edmund G. (See under American Printer.)

GRIMMEL, H. C., Baltimore, Md.: A Wheeler & Wilcox sewing machine used for over 55 years by Mrs. Henry Grimmel, mother of the donor (93715).

GRIMSHAW, P. H. (See under Royal Scottish Museum, The.)

GRINNELL COLLEGE, Department of Botany, Grinnell, Iowa (through Prof. H. C. Conard): 81 plants, chiefly from Europe (94740, 95751).

GRISOL, Manuel (through Dr. H. Pittier, Caracas, Venezuela): 38 Venezuelan plants (90718).

GROUT, Dr. A. J., New Brighton, N. Y.: 12 specimens of North American Musci Pleurocarpi (95101, exchange).

GUATEMALA, GOVERNMENT OF: *Dirección General de Agricultura*, Guatemala City, Guatemala, Central America (through Sr. Don Jorge Garcia Salas, Director

GUATEMALA, GOVERNMENT OF—Continued.

Dirección General de Agricultura—Continued.

General): 15 insects from Guatemala (92873, 96965); 2 specimens of moth larvæ in coffee stems (93457); 118 plants from Guatemala (94200, 95130, 95801, 96865); seeds of a plant (94723); 34 plants and 2 wood specimens from Guatemala (96249).

GUILLOT, Luis. (See under Direccion de Paseos Publicos, Montevideo (Prado), Uruguay.)

GUNNELL, L. C., Washington, D. C.: Weasel from Alexandria, Va. (94072).

GUTHRIE, Prof. J. E. (See under Iowa State College.)

GUYTON, T. L. (See under Pennsylvania Department of Agriculture.)

HALL, David G. (See under Arkansas, University of.)

HALL, Eugene, Washington, D. C.: A United States naval flag of the latter part of the nineteenth century (94761).

HALL, Fred H., Austin, Tex.: 20 plants (96060).

HALLOCK, Harold C. (See under Dr. H. C. Huckett.)

HALSEY, William S., New York City: Bronze club head and 6 pieces of jewelry from Cerro del Pasco, Peru, and a shell and gold nugget from the region of Lake Titicaca, Peru (96414).

HARDER, E. C., Philadelphia, Pa. (through D. F. Hewett, Washington, D. C.): Stone ax from northern Brazil (96707).

HARDING, H. T., Walla Walla, Wash.: 7 household articles of the American Indian and Eskimo (92502, exchange).

HARDWICK, Hubert, Livingstone, Northern Rhodesia (through State Department): Female negro skull and some bones from the same skeleton (97070).

HARLTON, Bruce H., Tulsa, Okla.: 21 slides of ostracods and 28 slides of foraminifera from the Pennsylvania Glenn formation of southern Oklahoma, representing types of species (96202).

HARNED, R. W., A. and M. College, Miss. (through Bureau of Entomology, United States Department of Agriculture, Washington, D. C.): 11 slugs from Pike County, Miss. (96748); 4 slugs (96016).

HARPER, Gosnon, Port of Spain, Trinidad, British West Indies: 2 land shells from Belle Eau Road, Belmont, Port of Spain, Trinidad (92476); approximately 25 shells from Trinidad (93154).

HARPER, Mrs. Ida Husted, Washington, D. C.: Desk chair owned and used by Susan B. Anthony, 1863–1906 (93069).

HARPER, Dr. R. M., Tallahassee, Fla.: 26 plants from Florida (92580, 96245).

HARRIS, Prof. B. B. (See under North Texas State Teachers College.)

HARRIS, Mrs. Eugene A., San Antonio, Tex.: Plant (96008).

HARRISON, Joseph, Jamaica, British West Indies: Approximately 200 shells from the West Indies (92554).

HARSHBARGER, Dr. John W. (See under Pennsylvania, University of.)

HART, Gosnon, O., Coytesville, N. J.: 29 prints, being the work of the donor (92987.)

HARVARD UNIVERSITY, Cambridge, Mass.:

Arnold Arboretum, Jamaica Plain, Mass.: 92 specimens of ferns collected by E. J. Palmer (94533).

Botanic Garden, Cambridge, Mass.: 2 plants (96401).

Cryptogamic Herbarium and Laboratories (through Prof. Roland Thaxter): 100 specimens of algae from Florida (96076, exchange).

HARVARD UNIVERSITY—Contd.

Gray Herbarium, Cambridge, Mass. (through Dr. I. M. Johnston): 4 fragmentary specimens of plants (93948); 12 plants from Honduras (95032); 10 specimens of Chilean ferns and 3 photographs of ferns (94290); 268 plants (96801). Exchange.

Museum of Comparative Zoology, Cambridge, Mass.: Turtle (cotype) (92872, exchange); toad from Mina Carlota, near Cienfuegos, Cuba, collected by E. R. Dunn in 1925 (92891); frog (94566); 4 bird skins from the West Indies, representing species new to the National Museum (94666, exchange).

HAUGHT, Oscar, Negritos, Peru: 72 plants from Peru (93203, 95349, 95903, 95950, 96397, 96846, 96976, 97091).

HAWAIIAN SUGAR PLANTERS EXPERIMENT STATION, Honolulu, Hawaii: 14 South American flies (91659).

HAWSON, Henry, Fresno, Calif.: 2 photographs of a beaked whale from Santa Cruz, Calif. (94583).

HAY, Dr. O. P. (See under Compañía de Petroleo "El Aguila" S. A.)

HAYNES, Miss Caroline C., Palm Springs, Calif.: 3 plants from California (94704, 95876).

HAYS, Dr. H. H., Cleves, Ohio (through Dr. John Uri Lloyd): A pocket case of "divided medicines," a micrometer, and a photograph of Doctor King for addition to the exhibit illustrating the eclectic school of medicine (94521).

HAZEL ATLAS GLASS CO., Wheeling, W. Va.: 92 pint jars of canned foods put up by members of 4-H Canning Clubs under auspices of the office of cooperative extension work, United States Department of Agriculture (97132).

HEIKES, Victor C. (See under L. B. Glafcke, and West Toledo Mining Co.)

HEITMELLER, Anton. (See under Miss Isobel H. Lenman.)

HEJRAL, Jova, Coney Island, N. Y.: A reconstruction of the skull of pithecanthropus (95399).

HELLER, A. A., Chico, Calif.: 30 plants (95006).

HENDERSON, John, Seattle, Wash.: A nearly complete tusk and a portion of another of a fossil elephant from Alaska (93921).

HENNING SALES AGENCY, Bertz O., Chicago, Ill. (through Alton B. Carty, Washington, D. C.): 5 specimens of nickel-steel stereotyping, a lead mold for electrotyping and 4 specimens of Elgin Made-Ready Electrotype Plate (95028).

HERMS, Prof. W. B. (See under California, University of.)

HERRERA, Dr. A. L. (See under Mexico, Government of, Dirección de Estudios Biologicos.)

HERRERA, Prof. Fortunato L., Cuzco, Peru: 379 plants and ferns from Peru (92839, 93551, 93578, 95998, 96291, 96398); (through Dr. J. R. Weir): 82 plants from Peru (93146).

HEWETT, D. F., Washington, D. C.: 3 specimens of Lower Cretaceous invertebrates from the Province of Viscaya, Spain (92984); 4 stone hammers from San Bernardino, Calif., used by an ancient people in mining or preparing turquoise (96238).

(See also under R. C. Harder, and Madame Fernand Serpieri.)

HEYL, C. H., 2d, Washington, D. C.: Specimens collected by the late Col. Charles H. Heyl, U. S. Army, during his campaigns in the West against the Indians (96777).

HIGGINS, Maurice L. J., Hartford, Conn.: 7 butterflies (92482); 46 beetles from Dutch Guiana (92961).

HILL, A. W., Edinburgh, Scotland: 3 gum prints made some 20 years ago by "Hill's pigment process" (95500).

HINDS, W. E. (See under Louisiana Experiment Station.)

HINE, Prof. James S., Columbus, Ohio: 8 flies (95352, exchange).

HINKLE, John, Namur, N. C.: Beetle (92459).

HIORAM, Rev. Brother, Guantanamo, Oriente, Cuba: 31 ferns from Cuba (95004).

HIRSCHI, Dr. H., Spiez, Switzerland: 2 specimens of dumortierite with tourmaline in pegmatite from Switzerland (95415).

HITCHCOCK, Prof. A. S. (See under Agriculture, Department of, Bureau of Plant Industry.)

HOFFMAN, Alfred, Kew Gardens, N. Y.: 12 specimens of chemicals for the Loeb collection of chemical types (97626).

HOFFMAN, Dr. William A., San Juan, P. R.: 40 insects, including cotypes of 2 species of Diptera (92562); 41 mollusks from seepage pools near Guayama, P. R. (95356); 122 insects and a small collection of shells from Porto Rico (96457).

HOFFMEISTER, Dr. J. E., Rochester, N. Y. (through John B. Reeside, jr.): 2 fossil shells from the Tertiary beds on Eua Tonga Islands (94542).

HOGVALL, A., Winkelman, Ariz.: Examples of limonite with fine irridescence from the Standard mine at Winkelman, Ariz. (94891).

HOLLANDER, I. H., Washington, D. C.: Colt revolver of the period of the Civil War (92796).

HOLLOW HORN BEAR, Miss Alice, Kary, S. Dak. (through Hon. William Williamson): Infant's crocheted and beaded hood (92359).

HOLMES, Dr. W. H., Washington, D. C.: 9 stone implements collected by the donor in Illinois and Maryland (96178).

HOLZINGER, Prof. John M., Winona, Minn.: A cluster of galls made by insects (98159).

HOMBERSLEY, Archdeacon Arthur, Trinidad, British West Indies.: 23 ferns from Trinidad (91839, 95731).

HOOVER, J. B., Pittsburgh Pa. (through Charles Butts): 45 fossil invertebrates from the coal measures of Armstrong County, Pa. (95016).

HORNER, Alfred B., Washington, D. C.: A silver cup of the Colonial period (94114).

HOUNAM, Sam, Ophir, Alaska: Portion of a skull of an extinct species of caribou from Alaska (92332).

HOWARD, Harry E., Hummelstown, Pa.: 6 18-inch pieces of butternut wood (92044).

HOWELL, A. B., Washington, D. C.: 34 fishes (94055); skull of a domestic dog (94071); 3 sessile barnacles, approximately 50 parasitic amphipods and many fragments of shrimp taken from a California gray whale, and 2 stalked barnacles taken from a hump-back whale, all from Trinidad, Calif. (94383); 12 small mammals from California (95325); approximately 150 crustaceans (96260); 5 fishes from Mexico and Africa (96269); female specimen of black-throated warbler (96792); 6 skeletons of the European hedgehog and embryos of a shrew (96964).

HOWELL, Miss Elinor C., Chevy Chase, Md.: Gray squirrel (95410).

HOXIE, W. J., Savannah, Ga.: Human bones from Georgia (92991).

HRDLICKA, Dr. A., Washington, D. C.: 18 specimens of Eskimo carving in old and recent ivory (94025); blue jay (96057).

(See also under Arctic Brotherhood: Master Baldwin, Chris Beach, Dr. Will Chase, Mrs. Ada Evans, Father Laferme, Karl Loucn, W. G. Marsh, Martin Matusuka, and Elwyn Swatmann.)

HUCKE, Dr. Kurt, Templin (Uckermark), Germany: 38 fossil mollusks from the Middle Oligocene (Septarienton) at Joachimsthal, Germany (94218).

HUCKETT, Dr. H. C., Riverhead, N. Y. (through Harold C. Hallock, Riverton, N. J.): Specimen of fly (96082); 3 flies, being paratypes of a new species (96410).

HUMPHREY, Col. R. H., Washington, D. C.: 97 specimens of piercing and slashing weapons. (92477, loan.)

HUMPHREY, ESTATE OF GEN. C. F. (through Col. E. H. Humphrey, United States Army, Washington, D. C.): 33 pieces of pottery and 31 pieces of bronze. (92478, loan.)

HUNGERFORD, Prof. H. B. (See under Kansas, University of.)

HUNTINGTON, Mrs. WILLIAM CHAPIN, Washington, D. C.: Collection of footwear assembled by the late Frank G. Carpenter, father of the donor, during some 40 years of foreign travel (93542).

HUNTINGTON, WILLIAM ELDERKIN, Washington, D. C.: Military uniform accessories, small pictures and a china cup owned by Col. William Anthony Elderkin, United States Army during the Civil War (90071).

HURD, CHARLES D., Evanston, Ill.: 6 specimens of chemicals for the Loeb Collection of Chemical Types (97625).

HYSLOPP, J. A., Washington, D. C.: 3 beetles, including a male paratype and 2 larvae (95411).

IDAHO MANGANESE CO., Cleveland, Idaho (through Interior Department, United States Geological Survey): 3 mammoth teeth from Idaho (93590).

ILEX OPTICAL CO., Rochester, N. Y.: 3 Ilex shutters with cable releases (96892).

ILLINOIS STATE NATURAL HISTORY SURVEY DIVISION, Urbana, Ill. (through Dr. T. H. Frison): 2 saw-flies (paratypes) (94503, exchange); 2 flies from Illinois (95118).

IMPERIAL FORESTRY INSTITUTE, Oxford, England (through Dr. J. Burtt Davy): 210 plants (97105, exchange).

INDIANA UNIVERSITY, Bloomington, Ind. (through Dr. Will Scott): 21 amphipods from Wawasee Lake, Indiana (95161).

INGRAHAM, Miss RUTH, Los Altos, Calif.: Eggs of katydid inserted in piece of railroad time table (95110).

INSTITUTO DE LA SALLE, Bogota, Colombia (through Brother Nicéforo María): 229 mammals from Colombia (91890, 97141). Exchange.

INTERIOR DEPARTMENT:

Office of Indian Affairs: (See under Roebling fund, Smithsonian Institution.)

National Park Service, Grand Canyon National Park, Grand Canyon, Ariz.: A slab of fossil footprints from the Supai formation, Grand Canyon National Park, collected by Glen Sturdevant (93195).

United States Geological Survey: Mineral specimens consisting of native sulphur and associated sulphate efflorescences, collected by W. T. Schaller in Culberson County, Tex. (92414); miscellaneous rocks and ores illustrating various published reports (92991); thin sections of educational series of rocks (93421); specimens from the Randsburg district, Calif., collected by F. L. Hess (93436); thin sections from J. D. Irving's Black Hills collection (93437); bat from Idaho (93514); 70 plants collected in northern Alaska by J. B. Mertie, jr. (93536); specimens illustrating Bulletins 774, 783, and 780-D, United States Geological Survey, by Clyde P. Ross (93564); ores from the Mineral Hill district, Idaho, and Searchlight mining district, Wyoming, and a large specimen of jarosite from Clark County, Nev. (93610); suite of 105 specimens representing the manganese ores and associated rocks from Montana, Utah, Oregon, and Washington, described in Bulletin 725-C, United States Geological Survey (93924); suite of 48 specimens representing the manganese ores and associated rocks from near Lake Crescent and Humptulips,

INTERIOR DEPARTMENT—Contd.

United States Geological Survey—Continued.

Wash., described in a bulletin of the United States Geological Survey (93927); suite of 68 specimens representing the ores and associated rocks from the Garrison and Phillipsburg phosphate fields, Montana, described in Bulletin No. 640-K of the United States Geological Survey (94003); rocks and ores illustrating the geology and ore deposits of the Mogollon district, N. Mex., described in Bulletin 787, United States Geological Survey (94004); part of a skull of a Pleistocene horse, collected by Philip S. Smith in northern Alaska (94008); 100 specimens, 53 species, of shells from Peard Bay, northern Alaska, and an isopod from the beach near Point Barrow, Alaska, collected by Philip S. Smith (94246); thin sections of rocks and ores from various districts in Nevada (94374); suite of 100 specimens representing the ores and associated rocks from the northwestern part of the Garnet Range, Mont., described in Bulletin 660-F of the United States Geological Survey (94375); thin sections and rocks from the various districts in California (94376); suite of eight specimens representing the ores and associated rocks from the Dunkleberg mining district, Granite County, Mont., described in Bulletin 660-g of the United States Geological Survey (94377); thin sections of rocks and ores from various districts in Arizona (94378); thin sections of eruptive rocks collected north of Boston, Mass., by J. S. Diller (94292); thin sections of rocks from various districts in Maine (94303); thin sections of rocks

INTERIOR DEPARTMENT—Contd.

United States Geological Survey—Continued.

collected by Walter H. Weed in the region about Sonora, Mexico (94304); thin sections of rocks from various districts in Utah (94397); 20 specimens of fossil material collected by L. W. Stephenson and W. C. Mansfield on the western shore of Chesapeake Bay, St. Marys County, Md. (94496); thin sections of rocks illustrating a report on the Colorado River dam sites by F. L. Ransome (94497); thin sections of specimens from various districts in the State of Washington (94522); thin sections of specimens from various districts in Montana (94523); thin sections of rocks collected in the Llano district, Tex., by Sidney Paige, and thin sections of specimens also collected by Mr. Paige in the region about Tyrone, N. M. (94524, 94525); thin sections of specimens from various districts in Oregon (94526); thin sections of specimens collected by C. W. Hayes in an examination for the Nicaraguan Canal Commission (94527); thin sections of specimens from the region about Knoxville, Tenn. (94528); thin sections of specimens collected by S. F. Emmons in the Acari mines, Peru, South America (94529); small collection of Triassic parasuchian reptile remains obtained by A. A. Baker in the Chinle formation, 2 miles south of Moab, Utah (94530); minerals upon which were made the optical determinations for Bulletin 670, United States Geological Survey, by E. S. Larsen (94544); Cambrian fossils obtained by L. S. Westgate in the Pioche district, Nev., and by James Gilluly in the Stockton

INTERIOR DEPARTMENT—Cont'd.

United States Geological Survey—Continued.

and Fairfield quadrangles, Utah (94702); manganese ores studied by D. F. Hewett and associates in the United States Geological Survey, and by George A. Thiel, University of Minnesota (95068); Upper and Middle Cambrian fossils collected by R. C. Moore in the Grand Canyon, Ariz., in 1923 (95618); 72 specimens of echinoderms and mollusks from North and South Carolina, described by L. W. Stephenson (95765); fossil teeth of horse and elephant collected by A. H. Kimsey, Farmersville, Tex. (96700); 71 specimens of manganese ores illustrative of published reports on deposits in New Mexico, Arizona, California, Wyoming, and Colorado (96878).

(See also under Idaho Manganese Co. and H. H. Roberts.)

INTERNATIONAL HEALTH BOARD OF THE ROCKEFELLER FOUNDATION, New York City (through Dr. F. F. Russell, director): 187 fishes from various localities in Central and South America, Haiti, and Porto Rico (92851); 11 fishes (95089).

INTERNATIONAL NICKEL CO., THE, Bayonne, N. J. (through Dr. Paul D. Merica): Specimen of metallic nickel for the Loeb collection of chemical types (97653).

INUKAI, Dr. Tetsuo, Sapporo, Japan: 3 salamanders from Sakhalin, Japan (95737).

IOWA STATE COLLEGE, Ames, Iowa (through Prof. J. E. Guthrie): Snake from Iowa (96561).

Department of Botany: 118 plants (96465, exchange); (through Prof. I. H. Pammel) 355 plants from Oregon (96936, exchange).

IVES, Frederick E., Philadelphia, Pa.: Half tone in 9 colors, dated August, 1881; halftone photogravure; 10 "Herome" colored photographs and 17 "Ricarbo" prints (96850).

IVES, Prof. J. D., Jefferson City, Tenn.: 16 insects and a salamander from Indian Cave, Tenn. (93400); 13 insects and a mollusk collected in a cave near Three Springs, Tenn. (94001); 2 bats and a collection of insects (94541); 4 insects, 9 isopods, a bat, an earthworm, and 2 spiders from Nick's Jack Cave, Tenn., and Mammoth Cave, Ky. (96973).

JACKSON, Ralph W., Cambridge, Md.: 2 pearly fresh-water mussels from Areas, Brazil (type and paratype of a new species) (95107).

JACOBSON, C. A., Morgantown, W. Va.: 3 specimens of chemicals for the Loeb collection of chemical types (97630).

JACOBSON, Dr. Ed. Anty, Port de Koek, Sumatra: 5 specimens of bugs from Sumatra, being types of 3 species described by Dr. J. R. de la Torre Bueno (94502); (through Dr. C. P. Alexander) 13 specimens of flies (the types of 8 species and 1 additional subspecies of Sumatran crane flies) (94603).

JACOT, Arthur Paul, Tsinan, China: 2 skulls and 3 skeletons of small mammals from Connecticut (95347).

(See also under Shantung Christian University, Department of Biology.)

JAMES, George H., Washington, D. C.: Watch made by Peter Garon, London, about 1650 (94074, loan).

JAMES, M., Lutesville, Mo.: 14 specimens, 8 species, of pearly mussels from Crooked Creek, Bollinger County, Mo., and 10 fossil gastropods from near Lutesville (96374).

JARDIN BOTANIQUE PRINCIPAL, Leningrad, Union of Socialistic Soviet Republics in Europe: 160 plants from Brazil (95381); 7 plants from Asia (96974). Exchange.

JOHANSEN, Holger, Summit, Canal Zone: 13 plants from Canal Zone (92777, 92965, 93237, 93473).

JOHNS HOPKINS UNIVERSITY, Baltimore, Md. (through Dr. Duncan S. Johnson): 2 shrimps and 2 crabs collected from the Mabess River, Jamaica (93842); 15 ferns from Jamaica (94062, exchange); (through Dr. Edward W. Berry) 2 seeds of plants from Panama (92489, exchange).

JOHNSON, Charles, Dry Tortugas, Fla.: 71 birds in alcohol, from Dry Tortugas, Fla. (93478).

JOHNSON, C. W., Boston, Mass.: 11 insects (93179); type specimen of a fly (95353, exchange).

(See also under Boston Society of Natural History.)

JOHNSON, Dr. Duncan S. (See under Johns Hopkins University, Baltimore, Md.)

JOHNSON, Frank, New York City: 4 specimens of insects, comprising male and female each of two rare species, new to the Museum collections (93016); 53 moths (94487); 110 specimens of Lepidoptera from Arizona, New York, and South America (95050); 49 moths and butterflies including several new to the Museum collections (90786).

JOHNSON, G. Duncan, Baltimore, Md.: 4 specimens of ferns from Jamaica (93482).

JOHNSON, Prof. J. Harlan, Golden, Calif. (through J. B. Reeside, jr.): 4 specimens of undescribed species of Cretaceous invertebrates from the Fox Hills sandstone of Colorado (93013).

JOHNSON, Dr. Paul, Washington, D. C.: Chimney swift (96418).

JOHNSON, Paul E. (See under Buchanan, Estates of Dr. and Mrs. Roberdeau.)

JOHNSTON, Miss Frances Benjamin, New York City: 60 bromide enlargements of photographs entitled "In Old World Gardens," for special exhibition of her work during the month of February (95106, loan).

JOHNSTON, Dr. I. M. (See under Harvard University, Gray Herbarium.)

JONES, Carl E., Lowshe, Ohio: Bottle and stone implements from Ohio (94410, 95175).

JONES, E. Dukinfield, Glendale, Calif.: 111 specimens of South American Lepidoptera, representing approximately 50 new species, and 43 specimens of Lepidoptera from California (95807).

JONES, Col. E. Lester, Washington, D. C.: Split bamboo fishing rod made about 1860 by Charles Hopkins Jones, father of the donor, and said to be the second fly rod ever made (93076).

JONES, Dr. Walter B., University, Ala.: Large exhibition slab illustrating the Ordovician-Devonian unconformity in Alabama (94790).

JORDAN, Dr. Karl, Tring, Herts, England: Rare insect from Malay Peninsula (90485); skeletons of 3 wood rats from near Great Falls, Va. (93924).

JOYCE ENGRAVING CO., MAURICE, Washington, D. C.: 4 halftone plates and 10 prints therefrom (93026).

JUDD, Neil M., Washington, D. C.: Pottery fragments collected by the donor in October, 1920, at Hueco tanks, near El Paso, Tex. (94580); 2 Navaho animal shrines and a bird trap used by Zuni Indians at Pueblo Bonito (95520).

JURICA, Hilary S. (See under St. Procopius College, Lisle, Ill.)

KALUSOWSKI, Dr. H. E., Washington, D. C.: Belgian double-barreled fowling piece, made about the middle of the nineteenth century (92303).

KANE, Charles, Washington, D. C.: American shelf clock of about 1850 (94956).

KANSAS STATE AGRICULTURAL COLLEGE, Manhattan, Kans. (through Prof. R. H. Painter): 8 flies, types of 3 species (95764; exchange); (through Charles H. Burt) scorpion (94750).

KANSAS, UNIVERSITY OF, Lawrence, Kans. (through Prof. R. H. Beamer) 2 specimens of flies (paratypes) (91906, exchange); 21 specimens of flies, paratypes of 9 species (94354, exchange); (through Prof. H. B. Hungerford) 8 specimens of beetles (93465); (through C. D. Bunker) 2 turtles (94122); 6 flies from Kansas (96463, exchange).

KEARNEY, Dr. T. H.: Washington, D. C.: 2 plants from Arizona (96454).

(See also under Agriculture, Department of, Bureau of Plant Industry.)

KEEVIN, E. E. (See under Roosevelt Newsboys' Association, The.)

KELLOGG, REMINGTON. (See under Smithsonian Institution, National Museum, collected by members of the staff.)

KENG, Dr. LIM BOON, Amoy, China: 3 photographs of a whale (93268).

KENNAN, Mrs. EMELINE WELD, Medina, N. Y.: Catalan (Spain) dagger and a Barbary (North Africa) knife (92452).

KENNEDY, E. F. (See under Southern Railway system, development service.)

KENNEDY, P. B. (See under California, University of.)

KLAER, Prof. JOHAN, Oslo, Norway (through Dr. E. O. Ulrich, Washington, D. C.): Collection of fossils, particularly ostracoda, illustrating the Ordovician and Silurian periods in Norway (90640).

KIMZEY, A. H., Farmersville, Tex.: 4 stone implements and a lot of potsherds from near Farmersville (95899).

KING, D. O., Mendoza, Argentina: Specimen of rhea (bird) from Argentina (95001).

KING, WILLIAM C., San Antonio, Tex.: Plant from Texas (93429).

KINSER, B. M., Bustis, Fla. (through E. J. Brown): The last upper tooth of an extinct species of horse (96508).

KINSEY, C. A., Belgrade, Mont.: Lower jaw of a marten from the Miocene near Belgrade (91717).

KIRK, Dr. EDWIN C., Philadelphia, Pa.: Mounting stand for holding lower jaws for photographing (96853).

KIRN, ALBERT J., Somerset, Tex.: 189 specimens of land and fresh-water shells from Iowa, Kansas, Texas, and other localities (95100).

KLARMANN, EMIL, Bloomfield, N. J.: 3 specimens of chemicals for the Loeb collection of chemical types (97629).

KLASE, J. S., Avon Park, Fla.: 4 insects and a lizard from Florida (94549).

KNOWLTON, Dr. G. F. (See under Utah Agricultural College.)

KNULL, J. N., Harrisburg, Pa.: 32 undetermined Hymenoptera (93518).

KOHL, Dr. E., Berlin, Germany: 10 specimens of minerals (80684, exchange).

KORNHAUSER, Dr. S. I. (See under Louisville, University of.)

KUGLER, Dr. H. G., Puerto Cabello, Venezuela (through Dr. W. P. Woodring, Washington, D. C.): 27 collections of Tertiary invertebrate fossils from the State of Falcon, Venezuela (93477).

KUYKENDALL, RHEA, Reserve, N. Mex.: Potsherds and fragments of 2 male skulls from Catron County, N. Mex. (92552).

(See also under Pat Birmingham and Mrs. Henry Graham.)

KYLIE, H. R. (See under Agriculture, Department of, Forest Service.)

LAFFERTY, C. E., Newfield, N. J.: 3 gray squirrels from New Jersey (95417).

LA FLESCHE, Dr. FRANCIS, Washington, D. C.: Necklace of seeds of Wanon-p'in-hi, or "necklace tree," from the Osage Indians, Oklahoma (98261).

LA FORTUNE, Rev. Father BERARDON, Nome, Alaska (through Dr. A. Hrdlička): 6 photographs of natives of Alaska (92809).

LANDIS, Col. J. F. REYNOLDS, United States Army (retired). (See under Aztec Club of 1847, The).

LARSEN, Dr. E. S., Cambridge, Mass.: 4 specimens of the mineral eancrinite described by E. S. Larsen and W. F. Foshag (95426).

LATHAM, Roy, Orient, N. Y.: 2 pearly fresh-water mussels and 3 valves of land shells from Montauk, Long Island, N. Y. (96001, 96476).

LATIMER, H. A., Boston, Mass.: 2 carbon prints and 8 photogravure prints (94782).

LAUGHLIN, Dr. BLANCHE STILL, Kirksville, Mo. (through Dr. Riley D. Moore, Washington, D. C.): 2 dental forceps used by Dr. Andrew Taylor Still (93587).

LA WALL, Prof. CHARLES H. (See under Lippincott, J. P., & Co.)

LAWLER, F. R., New Orleans, La.: Mollusk and egg cases of mollusk, a bryozoan, 2 leeches, and a land planarian (93291).

LAWRENCE & CO., Lawrence, Mass. (See under Pacific Mills, Boston, Mass.)

LENGERKE, J. VON, Orange, N. J.: 21 hawks from New Jersey (93922, 94062, 96275); goshawk and a red-tailed hawk from near Westchester, Conn. (93089); 3 goshawks and a marsh-hawk from New Jersey (94118).

LENMAN, Miss ISABEL H., Washington, D. C. (through Anton Heitmuller): 110 ethnological objects from the peoples of the Pacific (95745, loan).

LEON, Rev. Brother, Vedado, Habana, Cuba: 8 plants from Cuba (92432).

LEONARD, E. C., Washington, D. C.: 20 land shells from northern Haiti (96176).

LERMOND, NORMAN W., Gulfport, Fla.: 22 specimens of Miocene fossils dredged off the water front of St. Petersburg, Fla. (94507).

LESNE, P., Paris, France: 24 specimens, representing 10 species, of determined beetles of the family Lyctidae (96078).

LEWIS, Rev. C. S., Trenton, N. J.: 5 ferns from New York (94358).

LEWIS, Miss ELIZABETH S., Washington, D. C.: 2 fresh-water mussels from Anacostia River, at Benning Station, D. C. (92795).

LIBRARY OF CONGRESS, Washington, D. C.: Bound volume of herbarium specimens prepared by William Paine in 1732 (94599).

LIGHT, WILLIAM A. (See under Roebling Fund, Smithsonian Institution.)

LIORE & OLIVIER, Levallois (Seine) France: Photograph of the Llore & Olivier hydroplane, type Leo H. 194, with which Bernard and Bougault made the flight from France to Madagascar and return (96359).

LIPPINCOTT & CO., J. P., Philadelphia, Pa. (through Dr. Horatio C. Wood and Prof. Charles H. La Wall): Copy of the United States Dispensatory, twenty-first edition, for inclusion in an exhibit of American medicinal standards (96277).

LLOYD, Dr. JOHN URI, Cincinnati, Ohio: Medal awarded to the donor by the Cincinnati Industrial Exposition, 1875, for an exhibit of "Fine and rare chemicals" (94520).

(See also under Dr. H. H. Hays.)

LLOYD LIBRARY, THE. (See under Naturhistorisches Museum, Botanische Abteilung.)

LOHMANDER, HANS, Lund, Sweden: 66 isopods representing 5 species (95366).

LOHR, L. R. (See under American Military Engineers, The Society of.)

LOMEN, KARL, Nome, Alaska (through Dr. A. Hrdlicka): Archeological specimens from the Bering Sea region (93534, loan).

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, London, England (through Dr. F. A. Buxton): 42 flies (Sarcophigidae) from Samoa and New Hebrides (96515).

LONGLEY, Dr. W. H., Baltimore, Md.: 76 fishes from Tortugas, Fla.; also an insect and crustacean (93233).

LORING, J. ALDEN, Oswego, N. Y.: Skull of a male Seminole Indian from Florida (93835).

LOS ANGELES MUSEUM, Los Angeles, Calif. (through L. J. Muchmore): 4 flies (93378, exchange).

LOUISIANA EXPERIMENT STATION, Baton Rouge, La. (through W. E. Hinds): Moth bred from the "cotton leafworm" of Central Peru, Canete Valley, by Mr. Hinds (94128).

LOUISVILLE, UNIVERSITY OF, Louisville, Ky. (through Dr. S. I. Kornhauser): 40 flies and a specimen of subcutaneous tissue (from cadaver), infested with larvæ of Drosophila, from Louisville, Ky. (95672).

LOY, HARRY D., Romney, W. Va.: Bald eagle from West Virginia (94214).

LUEDERWALDT, Dr. H. (See under Museu Paulista.)

LUM, Mrs. BERTHA, Hollywood, Calif.: 51 wood-block prints in color, Japanese method, for special exhibition of her work from October 30 to November 26, 1928 (93627, loan).

LUMMIS, Mrs. GEORGE M., Fort Myers, Fla.: 2 plants from Florida (90088, 90490).

LUMMIS, STANDISH D., Fort Myers, Fla.: Orchid from Florida (93168).

LUQUIENS, H. M., Honolulu, Hawaii: 60 etchings, dry points, and aquatints for special exhibition of his work from January 31 to February 28, 1927 (94606, loan); 2 etchings, 2 dry points, and 1 aquatint (95955).

LUTHER BURBANK EXPERIMENT FARMS, THE, Santa Rosa, Calif.: 3 small lots of charred botanical food material from Indian mounds in Ohio (92845).

McATEE, W. L. (See under Agriculture, Department of, Bureau of Biological Survey.)

McCALLIE, S. W. (See under Georgia State Geological Survey, Atlanta, Ga.)

McCARTHY, R. F., Asheville, N. C.: Fragments of pottery found by the donor and A. F. Hough in the Pisgah National Forest, N. C. (92798).

McCONNELL, Dr. R. S., New York City: Beetle (94756).

McDONALD, Mrs. LOUISA H., Silesia, Md.: An old instrument for extracting teeth, owned by her husband, the late Dr. L. H. McDonald, of Norwalk, Ohio (93446).

McELVAIN, S. M., Madison, Wis.: 19 specimens of chemicals for the Loeb collection of chemical types (92944).

McGEHEE, Dr. E. P., Lake Village, Ark.: Larva of a moth (92616).

McGINNIS, W. R., Charleston, W. Va.: Specimen of the Carolina mantis (93292).

McGIRR, NEWMAN F., Philadelphia, Pa.: Book of Hours illuminated probably by Hans Memling and Gerard David with reproductions in photogravure of 11 representative miniatures (96422).

McGREGOR, E. A., Lindsay, Calif.: 73 insects from California (96083, 96763).

(See also under Agriculture, United States Department of, Bureau of Entomology.)

McGREGOR, R. C. (See under Philippine Islands, Government of.)

McINTOSH, WALTER R., Duncans, P. O., Jamaica, British West Indies: 30 shells from Jamaica (92896).

MCKEE, Prof. J. C., Agricultural and Mechanical College, Miss.: Plant from Mississippi (96452).

McNEILL, FRANK A. (See under Australian Museum, The.)

McPHERSON, W. W., Lubbock, Tex.: Portion of a skull of a phytosaurian reptile (93452).

McRAE, Dr. E. H., Tampa, Fla.: 2 insects from Florida (93456).

MACDONOUGH, G. H., Washington, D. C.: Gold-mounted sword presented by the State of New York to Commodore Thomas Macdonough,

MACDONOUGH, G. H.—Continued. United States Navy, and a pair of gold-mounted pistols presented to him by the State of Connecticut, in recognition of his achievements during the War of 1812-15 (94639, loan).

MacDOUGAL, Dr. D. T., Carmel, Calif.: Specimen and 7 photographs of plants (92419, exchange).

(See also under Carnegie Institution of Washington, Coastal Laboratory.)

MACE, B. M., Jr., American trade commissioner to Argentina, Uruguay and Paraguay, care State Department, Washington, D. C.: Bag containing a corncob and a fragment of fiber cord of the ancient Peruvians, found in a cemetery at Arica, Peru (92527).

MACGINITIE, G. E., Fresno, Calif.: 16 specimens of crustacea (93196).

MACKIE, Mrs. RALPH P., McKinley Park, Alaska: 40 plants from Alaska (90038, 92534, 92588, 93158).

MACNEAL, W. J., New York City: 10 specimens of chemicals for the Loeb collection of chemical types (97628).

MADDEN, J. L., Shinnston, W. Va.: Approximately 500 land, fresh-water and marine shells and a crab from Charlotte County, Fla. (92572).

MAHOGANY ASSOCIATION (INC.), New York City: 8 large panels of Central American and African mahogany, and 5 small inlaid panels showing mahogany in combination with other valuable woods (94547).

MAINE FOREST SERVICE, STATE OF, Augusta, Me. (through H. B. Peirson): 4 specimens of insects (92435).

MALLINSON & CO. (INC.), H. R., New York City: 14 specimens of silk dress fabrics (92559); 25 samples of novelty silk fabrics, called the American National Park Series, which are printed with designs inspired by the natural wonders of our National and State parks; and 9 piece-dyed silk fabrics for installation with these (95522).

MALLOCH, J. R., Washington, D. C.: 3 specimens of flies, paratypes of 1 species (95487); 5 specimens of flies, including paratypes of 3 new species (94979).

MANDA, Hosmer P., West Orange, N. J.: 12 plants (cacti) (92417).

MANDA (INC.), W. A., South Orange, N. J.: 9 plants (cacti) (92557, exchange).

MANSFIELD, Mrs. GEORGE R., Washington, D. C.: Boy's hat of the early part of the nineteenth century (93219).

MARCUCCI, Sr. Don Francesco, Moyuta, Guatemala, Central America: Seeds of a tree from Guatemala (94208, 94732).

MARSH, O. Gaviola, Montevideo, Uruguay (through Department of State): Barnacle known as "Whale louse," taken from a whale in the vicinity of the South Shetland Islands (92379); 2 mollusks and some barnacles from Uruguay (93374).

MARSH, W. G., Anchorage, Alaska (through Dr. A. Hrdlička): 1 Leaf-shape flint blade found by the donor on a ranch 5 miles northeast of Anchorage (93620).

MARSHALL, Byron C., Imboden, Ark.: 80 insects from Arkansas (93152, 93938, 94757, 95110, 96861).

MARSHALL, Harvey B., Laurel, Md.: Crow, 4 pine mice, 2 specimens of laughing gull and a blue jay, 2 specimens of red-shouldered hawk, and 25 small mammal skulls, and a sparrow hawk, all from Maryland (93479, 94074, 94111, 94949, 96427, 96469).

MARSHALL, George, Washington, D. C.: 3 specimens, 2 species, of fresh-water mussels from Patuxent River, Laurel, Md. (96438).

MARTIN, George A.: Approximately 112 shells from Jamaica (90149).

MARTIN, Dr. THOMAS H. (See under American Optometric Association.)

MARTIN, W. N., Rouzerville, Pa.: Skin of a pigmy hippopotamus from Sierra Leone, Africa (88655).

MARTINEZ, Sr. Don Maximino. (See under Mexico, Government of. Direccion de Estudios Biologicos.)

MARYLAND HISTORICAL SOCIETY, THE, Baltimore, Md.: 3 fragments of the Star Spangled Banner and 4 documents establishing their authenticity (93535).

MASON FIBRE CO., Laurel, Miss.: 43 specimens showing stages in the manufacture of "Masonite," a synthetic lumber (96280).

MATHER, William G., Cleveland, Ohio: Book entitled "The Portraits of Increase Mather" by K. B. Murdock, printed by Bruce Rogers at the Harvard University Press, 1924 (92563).

MATHESON, Prof. Robert. (See under Cornell University.)

MATHEWS, Prof. Asa A. L. (See under Utah, University of.)

MATILDA ZIEGLER PUBLISHING CO. FOR THE BLIND (INC.), New York City: 3 specimens of printing for the blind (96419).

MATLEY, Dr. C. A., Edinburgh, Scotland (through Dr. W. P. Woodring): Collection of late Tertiary fossils from Jamaica (96562).

MATTHEWS, Ransom, Selma, Calif.: Collection of ignition apparatus comprising a high tension Atwater Kent generator; a German Bosch magneto; an American Bosch magneto; a Rocker type magneto; and 9 spark plugs (95489, loan).

MATUSUKA, Martin, Fairbanks, Alaska, (through Dr. A. Hrdlička): Fossil skull of a horse from Tofty, Alaska, and the skull of a grizzly bear from the Seward Peninsula, Alaska (92480).

MAWDITT, Prof. Fred., Vera Cruz, Mexico: 4 specimens of fungi (91248).

(See also under Estacion Forestal.)

MAX AMS CHEMICAL ENGINEERING CORPORATION, Bridgeport, Conn.: An exhibit illustrating the production of viscose rayon (92361).

MAY, Col. Henry, Washington, D. C.: Infantry field officer's dress helmet of the period of the Spanish-American War, and a Sharp's rifle, caliber 45 (96945); pair of dragoon revolvers, caliber 45, period of the Civil War, and a shoulder stock (97140).

MAYER, Mrs. Eleanor Gale, Ryder, Alaska: 107 plants from Alaska (94087).

MEADOWS, Don C., Laguna Beach, Calif.: 100 insects from California (95409).

MEIERE, Thomas McKean. (See under Buchanan, Estates of Mr. and Mrs. Roberdeau.)

MELANDER, Prof. A. L., New York City: Specimen of fly (96794, exchange).

MELL, C. D., New York City: 35 plants from Mexico (95342, 96012, 96014, 96244); 22 plants (95400, 95635); specimen each of Jonote and Caobillo wood collected by the donor in Mexico (96629).

MERCK & CO., Rahway, N. J.: 13 specimens of medicinal substances made official in the United States Pharmacopoeia X (93800).

MEREDITH, A. A., Amarillo, Tex.: 15 galls made by flies on swamp willow bush in Texas (94568).

MERICA, Dr. Paul D. (See under International Nickel Co.)

MERRILL, Dr. Elmer D., Berkeley, Calif.: 4 plant photographs (types of species) (96902).

MERRITT, E. B. (See under S. F. Stacher.)

METCALF, Dr. M. M., Baltimore, Md.: 8 trematode worms taken from reptiles collected in Brazil (91767).

METROPOLITAN MUSEUM OF ART, New York City (through Harry Wehle): 26 photographs of miniatures in the Metropolitan Museum of Art (92820).

MEXICO, GOVERNMENT OF:
Direccion de Estudios Biologicos (through Dr. A. L. Herrera): 7 crayfishes (92355); 2 specimens of shrimp from Tuxtla Guitierrez, Chiapas, Mexico (92407); 2 sea-urchins (92500); plant from Mexico (92973, exchange); mollusk (93200); 2 living plants (93263, exchange); 2 shells (93545); 5 specimens, 3 species, of land and fresh-water shells and a few marine invertebrates from the State of Vera Cruz, Mexico (93940); 11 crayfishes collected from the river Cupatitzio, Michoacan (94535); plant from Mexico (94967, exchange); shell and 3 opercula from Guyamas, Sonora, Mexico, and a starfish (96254); approximately 50 mollusks from El Penon, Mexico (96435); (through Sr. Don Maximino Martinez) 7 plants and 4 photographs of plants (92158, 92378, 95127, exchange).
Direccion Forestal y de Caza y Pesca, Mexico, Mexico (through Carlos Stansch, Escuinapa, Sinaloa, Mexico): Marine invertebrates, some immature fishes, and a mollusk from Mexico (92746).

MEYER, Dr. Reinhold, Darmstadt, Germany: 78 specimens of determined European bees, representing 47 species; 279 specimens, representing 53 determined species of aculeate Hymenoptera; 262 specimens of Hymenoptera representing 81 species (88571, 94557, 95377). Exchange.

MEYN, Hermann, Washington, D. C.: Collection of antique hinges and locks (93576).

MICHIGAN, UNIVERSITY OF, department of geology, Ann Arbor, Mich.: Cast of a phytosaur pelvis (92561, exchange).

MIDDLETON, George, Washington, D. C.: English penny coined in 1707 during the reign of George III (94556).

MILLER, Mrs. Florence G., Washington, D. C.: Wooden spoon from the Philippine Islands, inscribed with rare Battak writing (92970).

MILLER, Gerrit S., jr., Washington, D. C.: Plant from Virginia (96978).

MILLS, Alfred Elmer. (See under Frederick A. Canfield.)

MILLS, Edward K. (See under Frederick A. Canfield.)

MILLS, Lieut. K. L. (DF) United States Naval Reserve, Fort Lauderdale, Fla.: Echinoid from Florida (93282).

MILLS, Mrs. Stephen C., Washington, D. C.: Small collection of Indian and Philippine baskets and mats (93490); Apache basket from the collection of the donor's father, the late Gen. J. C. G. Lee (95425).

MILWAUKEE PUBLIC MUSEUM, department of geology, Milwaukee, Wis.: 235 specimens of invertebrate fossils from Wisconsin (90418, exchange).

MIRGUET, C. E., Washington, D. C.: Skeleton of a rough-winged swallow from Washington, D. C. (92799).

MISER, H. D. (See under Dr. E. O. Ulrich.)

MIYOSHI, Kotaro, Yamaguchiken, Japan: Small collection of miscellaneous insects from Japan (96409).

MONSANTO CHEMICAL WORKS, St. Louis, Mo.: A 4-ounce specimen of chlorinated paraffin (92894).

MOONEY, R., Washington, D. C.: Slab of fossil chinoids from the Mississippian rocks at Judith Gap, Fergus County, Mont. (96273).

MOORE, Dr. Riley D. (See under Dr. E. R. Booth, Dr. Blanche Still Laughlin, and Dr. Curtis H. Muncie.)

MOOREHEAD, Warren K. (See under Phillips Academy.)

MORGAN, Mrs. E. L., Washington, D. C.: Collection of ethnological and skeletal material gathered by the late Dr. E. L. Morgan (39 specimens) (93169).

MORREY, Mrs. J. B., Washington, D. C.: 12 ethnological specimens mainly from the Western Indians, and a gourd dipper (95584).

MOLTENSEN, E., Uvalde, Tex.: 8 specimens of cacti (92559).

MOTT, Dr. G. E., United States Navy, Annapolis, Md.: Italian sword of the early fifteenth century (95868).

MOULTON, Dr. W. B., Portland, Me.: 24 cut gems of tourmaline from Maine, showing variety of color (96302).

MUCHMORE, L. J. (See under Los Angeles Museum.)

MUNCIE, Dr. CURRIS H., Brooklyn, N. Y. (through Dr. Riley D. Moore, Washington, D. C.): 5 instruments used by osteopaths in the treatment of deafness (93430).

MUNDT, WALTER, Berlin-Mahlsdorf, Germany: 3 plants (95100, exchange).

MUNROE, Miss HELEN, Washington, D. C.: A ball dress of brocade silk ornamented with bouquets of flowers and fruits; Chinese carved ivory cardcase; blue velvet beaded bag and 2 beaded bags and a silk fan with ivory sticks used during the early part of the nineteenth century (95746).

MUNZ, Dr. PHILIP A. (See under Pomona College, Claremont, Calif.)

MURAKAMI, HANSO, Japan: 8 specimens of Cambrian fossils (92983, deposit).

MURPHY, O. A., Salt Sulphur Springs, W. Va.: Nest of the blue-gray gnat catcher from West Virginia (93253).

MURPHY, ROBERT CUSHMAN, New York City: 5 parasitic isopods (93444).

MUSEE ROYAL D'HISTOIRE NATURELLE DE BELGIQUE, Brussels, Belgium: Fragment from the meteoric stone which fell at Leares, Belgium, April 13, 1890 (92228, exchange).

MUSEU PAULISTA, Sao Paulo, Brazil, South America (through Dr. H. Luederwaldt): Anomuran crab from Isle Sao Sebastiao, and 69 marine mollusks from Brazil (91456, 92443).

MUSEUM NATIONAL D'HISTOIRE NATURELLE, Paris, France: 2 photographs of a plant; 1207 plants, mainly from Asia (92613, 93523). Exchange.

NABOURS, ROBERT K., Manhattan, Kans.: Otolith (ear stone) taken from a catfish in Kansas River (96297).

NANKING, UNIVERSITY OF, College of agriculture and forestry, Nanking, China (through C. Y. Chiao): 2,000 Chinese plants (93808, exchange).

NASH, JOHN HENRY, San Francisco, Calif.: Broadside entitled "El Tolson de Oro," written by Edward O'Day, printed by the donor in 1925, and awarded a first prize at the Graphic Arts Leaders Exhibition at Philadelphia (94053).

NATIONAL GEOGRAPHIC SOCIETY Washington, D. C.: 3,550 plants collected in the North River region of southern China, under the direction of F. R. Wulsin (3rd collection) (93590); archeological material collected for the society by Neil M. Judd from various prehistoric village sites in Arizona and New Mexico, during October, 1926 (94762); archeological collections from ruins in or near Chaco Canyon, N. Mex., from the society's Pueblo Bonito expeditions (1921–1926) under Mr. Judd (95112); archeological collection from Pueblo del Arroyo, Chaco Canyon National Monument, N. Mex., secured by the Pueblo Bonito expeditions (1921–1926) of the society under Mr. Judd (95954); archeological material collected by the society's expeditions at the ruin of Pueblo Bonito, Chaco Canyon National Monument, N. Mex., during the years 1921–1926 (96004).

NATIONAL MUSEUM, Copenhagen, Denmark: Collection of 85 ethnological specimens from the Ammassalik Eskimo of East Greenland (93532, exchange).

NATIONAL SESQUICENTENNIAL EXHIBITION COMMISSION: A series of radium ores and radioactive minerals; vertebrate fossils including fish, turtle, and lizard remains, and 50 specimens of Early Paleozoic invertebrates (95977); series of United States flags showing the development of the design 1776–1926 (8 specimens) (97038). Transfer.

NATIONAL SOCIETY OF THE COLONIAL DAMES OF AMERICA, Washington, D. C. (through Mrs. James C. Fraser): A trench coat worn during the World War by Miss Elizabeth C. Lee (96788, loan).

NATURAL HISTORY MUSEUM, San Diego, Calif.: 14 specimens of parasitic mites (92494).

NATURAL HISTORY MUSEUM, Stockholm, Sweden: 2 skulls of wolverine from Swedish Lapland (92188, exchange).

NATURHISTORISCHES MUSEUM, Botanische Abteilung, Vienna, Austria: 16 lots of washings with Tertiary bryozoa from Europe (92500); 100 specimens (Century 30) Kryptogamae Exsiccatae (96382, exchange); (through the Lloyd Library, Cincinnati, Ohio) 27 specimens of fungi (96661, exchange).

NATURHISTORISKA RIKSMUSEET, Stockholm, Sweden:

Botaniska Afdelning: 121 specimens of ferns collected in Cuba by E. L. Ekman (95234, 97326); (through Prof. G. Samuelsson) 192 specimens of Brazilian plants (92642); 269 plants, chiefly from Cuba (92871); 7 plants from Cuba (95084); 200 plants from South America (96632); 253 plants (96937). Exchange.

Mineralogiska Avdelning: 2 mineral specimens, fluoborite and magnesiumortnite from Norberg, Sweden (95076, exchange).

Paleobotaniska Avdelning. 137 specimens of Mesozoic and Cenozoic plants, chiefly from Scania (93808, exchange).

NAVY DEPARTMENT: 5 aircraft engines, namely, the Hall Scott A-7-A, Union 2-6, Curtiss CD-12, Wright D-1, Bentley BR-2 (90248); hull of the *NC-4*, the Navy boat airplane which was the first aircraft to cross the Atlantic Ocean (96800); (through California Academy of Sciences, San Francisco, Calif.) 6 frogs, 2 snakes, and 43 lizards from the Revillagigedos Islands, collected by the academy's expedition to the islands in 1925 (94348).

NELSON, Edwin C., Boulder, Colo. (through Prof. T. D. A. Cockerell): Type specimens of a butterfly (95137).

NEVERMANN, Ferdinand, San Jose, Costa Rica (through T. E. Snyder): Specimen of fungus (92971); plant from Costa Rica (94088).

NEWELL, Mrs. Ellen M., Coconut Grove, Fla.: Moth from Florida (96662).

NEWTON, A. J., Rochester, N. Y.: 8 rotary photogravure prints in color, made by the Sun Engraving Co., Watford, England (94113); 12 specimens of rotary photogravure work of the Sun Engraving Co., of Watford, England, comprising 1 set of progressive proofs in 3 colors, and a set of progressive proofs in 4 colors (95509).

NEW YORK BOTANICAL GARDEN, Bronx Park, New York City: 126 plants (92404, 92427, 92786, 93045, 93052, 94255, 94518, 94514, 94710, 94759, 94765, 94966, 96287, 96610); plant from Kentucky (92434); 2 photographs of plants (92481); 12 plants from the West Indies (92779); photograph of type sheet of a plant (93246); 79 plants from Florida (93474, 93491, 93501, 93622); 5 fragmentary specimens and 1 photograph of plants (93594); 7 specimens and 2 photographs of plants (93930); 11 ferns from Cuba (94223); 2 photographs of plants (94364); 9 ferns from Porto Rico (96489); 2 ferns from Cuba (96977). Exchange.

NEW YORK STATE AGRICULTURAL EXPERIMENT STATION, Geneva, N. Y. (through Hugh Glasgow): Fly (adult and puparium) (90604).

NEW YORK STATE MUSEUM, Albany, N. Y.: (Through Dr. E. P. Felt) 4 flies from Allegany State Park (93502); (through Dr. Rudolf Ruedemann) fossil foraminifera and ostracoda from European localities (90644, exchange).

NICE, Mrs. MARGARET M., Norman, Okla.: 17 ferns from Oklahoma (93236, exchange).

NICEFORO MARIA, Brother. (See under Instituto de la Salle, Bogota, Colombia.)

NIEDER, CHARLES P., Miami, Fla.: 2 insects from Florida (90666).

NIELSEN, Dr. K. BRUNNICH. (See under Universitetets Zoologiske Museum, Copenhagen, Denmark.)

NIEMEYER, Miss ERNESTINA H., Barranquilla, Colombia: 66 plants from Colombia (94253).

NORDFELDT, B. J. O., Santa Fe, N. Mex.: 70 etchings, drypoints, and wood-block prints in color, for special exhibition of his work from November 27, 1926, to January 2, 1927 (94249).

NORTH CAROLINA DEPARTMENT OF AGRICULTURE, Raleigh, N. C.: (through C. S. Brimley) 6 flies (92269), 14 flies from North Carolina (94123); (through M. C. Van Duzee) 6 flies, types of 5 species, described by Mr. Van Duzee (95239); (through J. C. Crawford) 23 named bees and wasps, including 11 species, 2 of which are represented by types (95531, exchange).

NORTH CAROLINA, UNIVERSITY OF, Department of Botany, Chapel Hill, N. C.: 20 specimens of fungi, chiefly type material (93502, exchange).

NORTH TEXAS STATE TEACHERS COLLEGE, Denton, Tex. (through Prof. B. B. Harris): 8 insects from Texas (92382).

NORTON CO., THE, Worcester, Mass.: An exhibit visualising the manufacture of Alundum (artificial abrasive), grinding wheels, and refractories, consisting of 67 numbered specimens, 9 sketches and a model of an Alundum electric furnace (90870).

NOWICKY, S., Prague II, Czechoslovakia (through A. B. Gahan): 96 chalcid-flies, including 5 named species (92985, exchange).

NUNEZ-TOVAR, Dr. M., Maracay, Estado Aragua, Venezuela: 1,400 insects from South America (93376, exchange); (through Dr. H. G. Dyar) 1,500 specimens of mosquitoes (93620, 94546, exchange); 8 flies from South America (94206).

OHIO STATE ARCHEOLOGICAL AND HISTORICAL SOCIETY, Columbus, Ohio: Mounted sample of prehistoric cloth from Seip Mound No. 2, Bainbridge, Ross County, Ohio (94007).

OHSHIMA, Dr. HISOSHI, Fukuoka, Japan: 13 specimens of a commensal crab (95542); 34 specimens of crabs collected by the donor in Tapes shells at the shore of Nishi-Park of Fukuoka (96310).

OKLAHOMA, UNIVERSITY OF, Norman, Okla. (through Dr. A. I. Ortenburger): Soft-shelled turtle (89556); 22 turtles from Oklahoma (93205).

OLDROYD, Mrs. IDA S. (See under Stanford University, department of geology and mineralogy.)

OLDROYD, T. S., Stanford University, Calif.: Approximately 200 specimens of fingers of fossil crustacea (95943).

ORCUTT, C. R., San Diego, Calif.: 4 specimens of living plants from Texas; also a turtle, mammal skull, insects and shells (92384); approximately 950 mollusks, insects, plants, 2 crabs, and an archeological specimen from Texas, Mexico, and New Mexico (92624); 55 plants from the United States (92766); 50 land shells from a tributary of the

OBOUTT, C. R.—Continued.
Puerco River, Ariz. (93461); plant (93537); 3 plants from California (93614); 3 specimens of marine invertebrates (93355); 1 starfish and 1 sea-urchin (95405); 2 crabs (95619); crab and beetle (95644); crabs, isopods, and bottom samples, mummified bird, and fragments of a lizard shell (96001).

OREGON AGRICULTURAL COLLEGE, Corvallis, Oreg. (through H. A. Scullen): 5 specimens of pinnotherid crabs (93210); (through Joseph Wilcox) 17 specimens of flies (94205, 94977, 95408).

OREGON, UNIVERSITY OF (through Prof. E. L. Packard): 6 specimens of fossil crab material (94987).

ORTEGA, Sr. Ing. Jesus G., Mazatlan, Sinaloa, Mexico: 102 Mexican plants and 45 wood specimens (92395); 150 plants from Mexico (94640); 3 photographs of plants (95125); 150 plants from Mexico and a photograph of a plant (95140).

ORTENBURGER, Dr. A. I., Norman, Okla.: 48 plants from Oklahoma (93008).

(See also under Oklahoma, University of.)

OSBORN, Mrs. Henry Fairfield (See under Madame Marius de Brabant.)

OVER, Prof. W. H. (See under South Dakota, University of.)

PACIFIC MILLS, Lawrence, Mass. (through Lawrence and Company): 15 samples of printed cotton goods (96973).

PACK, Herbert J. (See under Utah Agricultural College.)

PACKARD, Prof. E. L. (See under Oregon, University of.)

PAHNKE, Richard J., Washington, D. C.: Pair of Chinese shoes from the Philippine Islands; pair of wooden shoes from Germany; pair of paper twine shoes made and used in Germany during the World War, and a specimen of paper twine fabric from Germany (95630).

PAINE LUMBER CO. (LTD.), Oshkosh, Wis.: An African mahogany table with attached exhibit case (93295, exchange).

PAINTER, Prof. R. H. (See under Kansas State Agricultural College.)

PALMER, Ernest J., Webb City, Mo.: 3 plants from Texas (92502).

PALMER, Dr. Katherine V. W., Ithaca, N. Y.: Fossil crab (84181).

PAMMEL, Prof. L. H. (See under Iowa State College.)

PAMPANA, Dr. E. J., Andagoya, via Buenaventura, Colombia, South America: 20 snakes from Choco Province, San Juan River, Colombia (96447).

PAN AMERICAN UNION, Washington, D. C.: 12 plant bulbs (94742, exchange).

PARISH, S. B., Berkeley, Calif.: Plant from California (96537).

PARKE, DAVIS & CO., Detroit, Mich.: 8 medicinal substances made official in the United States Pharmacopoeia X (93279).

PARKER, John L. (See under Precancel Stamp Society.)

PARKS, H. E. (See under California, University of.)

PAUL, Rev. Brother, Colegio Biffi, Barranquilla, Columbia: 46 plants from Columbia (93418).

PAUL, Miss Paula, Blumenau, Est. Sta. Catharina, Brazil: 2 specimens of fresh-water crustacea collected by the donor (92853).

PAYNE, Edward W., Springfield, Ill.: Small lot of photographs of archeological specimens in the Springfield Museum (94129).

PAYSON, Edwin B. (See under Wyoming, University of.)

PEARSON, Prof. Nathan E., Indianapolis, Ind.: 4 specimens of fly larvae, parasitic on katydid, from Winona Lake, Ind. (95099).

PEATTIE, Donald C., Rosslyn, Va.: 32 plants collected in Morelos, Mexico, by Mr. Robert Redfield (95974).

(See also under Robert Redfield.)

PEIRSON, H. B. (See under Maine Forest Service, State of.)

PEKING, CHINA, GOVERNMENT HISTORICAL MUSEUM (through Ch'in Tsu-yuan, director and Freer Gallery of Art): 2 models of ancient Chinese war chariots based in part on fragments found at Hsin-ch'eng Hsien, 27 miles south of Ch'eng Chou, Honan Province (95540).

PELLOUX, Prof. A., Genoa, Italy: 7 specimens of minerals from Italy (95736, exchange).

PENNSYLVANIA DEPARTMENT OF AGRICULTURE, Harrisburg, Pa. (through T. L. Guyton): 2 phyllopods collected by George E. Lester in Pennsylvania (90382); 10 specimens of insects (92959); (through A. B. Champlain); 3 flies (96319).

PENNSYLVANIA, UNIVERSITY OF, Philadelphia, Pa. (through Dr. John W. Harshberger) 15 plants (95734).

PEPPER, J. O. (See under Clemson Agricultural College.)

PERKINS, Mrs. EVELYN, Perkinsville, Ariz.: Nearly complete skeleton of a middle-aged male Pueblo Indian and a small lot of pottery fragments (96342).

PERKINS, JOHN U., Washington, D. C.: "Moves" motion-picture camera and projector (92459); 41 examples of rotary photogravure published about 1906 (96425).

PERRY, CURTIS A., Sanibel Island, Fla.: 4 specimens, 2 species of mollusks from Sanibel Island, Fla. (95176).

PERRY, STUART H., Adrian, Mich.: A 30-gram fragment of the Seneca Township, Lenawee County, Mich., meteoric iron (95982).

PERRYGO, W. M., Washington, D. C.: Gray squirrel from the District of Columbia (96408).

PERSONS, C. E. (See under Standard Oil Co. of California.)

PETERS CARTRIDGE CO., THE, Cincinnati, Ohio: Display board of ammunition products (120 specimens) (96659).

PETROCELLI, JOSEPH, Brooklyn, N. Y.: 55 bromoil prints for special exhibition of his work during April and May, 1927 (95906, loan); 4 bromoils—"At the door of the Mosque," "Fakirs of the Sahara," "All Ben Hassan," and "Sunset in Florence" (96018).

PHILIPPINE ISLANDS, GOVERNMENT OF:

Bureau of Science, Manila (through R. C. McGregor): 16 starfishes (93424); 310 specimens of miscellaneous insects from the Philippine Islands (94227); 28 skeletons, 90 species, of birds from the Philippines (94540, exchange); 183 specimens of miscellaneous insects, some sponges, and a vial of shells from the Philippine Islands (94630); 12 specimens of miscellaneous insects from Laguimanoc (95115); 464 specimens of miscellaneous insects and 4 lots, 11 specimens, of shells from the Philippines (95651); 536 miscellaneous insects from the Philippines (96097).

PHILLIPS ACADEMY, Andover, Mass. (through Warren K. Moorehead): 16 human skulls from burials in Hopkinsville, Ky. (97069).

PHOTOGRAVURE AND COLOR CO., New York City: 11 examples of photogravure, the work of the donor (96421).

PICKENS, A. L., Greenville, S. C.: 3 salamanders, soft-shelled turtle and the lower pharyngeal of a drum fish, 8 frogs and 5 salamanders, 2 snakes, 9 frogs, and 3 salamanders, turtle, 3 salamanders and one nematode, and 3 salamanders, all from South Carolina (92375, 93506, 94223, 95369, 96236, 96876).

PIERCE, Dr. W. DWIGHT, Washington, D. C.: Small collection of natural history material comprising 1 mammals, 14 insects, 3 bird skins, and 2 bird tongues, approximately 150 specimens of land and fresh-water

PIERCE, Dr. W. Dubois. Continued. shells (mostly slugs), 2 specimens of fishes; also 3 human embryos (93729).

PILGER, Dr. R. (See under Botanischer Garten und Museum, Berlin-Dahlem, Germany.)

PILSBRY, Dr. H. A., Philadelphia, Pa.: 4 shells (paratypes) from Zion Park, Utah (94363); 25 specimens, 6 species, of land shells from New Mexico and Texas (95188).

PING, C., Amoy, China: Approximately 500 specimens of land, fresh-water, and marine shells from China (95890).

PIRION, P. ANASTASE, Santiago, Chile, South America: 28 flies from South America (96639).

PIRTLE, Capt. JAMES J., United States Army. (See under Dr. T. S. Clay).

PITTIER, Dr. H., Caracas, Venezuela: 9 specimens, 5 species, of fresh-water shells, including the types and 3 paratypes of 2 new species of fresh-water mussels; 173 plants; 114 miscellaneous insects, all from Venezuela (92555, 94382, 96975, 96665). (See also under Mayent Grisol.)

PLASSE, GEORGES, Paris, France (through Ralph C. Smith, Washington, D. C.): 2 progressive proofs of a sugar process etching (96243).

PLATTS, NORMAN G., Fort Pierce, Fla.: 2 fishes, and 20 mosquitoes from Florida (96367, 96297).

PLITT, Louis A. E., Hamilton, Baltimore, Md.: Photograph of a plant (95162, exchange).

POHL, E. R. (See under Smithsonian Institution, National Museum, collected by members of the staff.)

POLLARD, Mrs. WILLARD A., Washington, D. C.: Bow, quiver, and 7 arrows of the Kiowa Indians, Oklahoma (93571).

POMONA COLLEGE, Claremont, Calif. (through Dr. Philip A. Munz): 15 plants collected in California by Doctor Munz (96550, exchange).

POPENOE, C. H., Silver Spring, Md.: Bird (94584); bird representing a species new to the Museum collections (94703); love bird (95388); black-cheeked love bird (96754); 200 land and fresh-water shells from Kansas, and a lot of crustaceans (96623); 2 black-winged love birds (96912, 97071).

PORTS, PERCY L., Clarendon, Va.: Plant from Texas (96356).

POST OFFICE DEPARTMENT: 13 sets of specimen stamps, etc., in triplicate (4,840 specimens) received from the International Bureau of the Universal Postal Union, Berne, Switzerland (92369, 92974, 93178, 93540, 93958, 94045, 95067, 96148, 96945, 96185, 96960); 3 specimens each of the following United States postage stamps: Sesquicentennial commemorative stamp, 2-cent, issue of 1926; John Ericsson memorial stamp, 5-cent, issue of 1926 (6 specimens) (92395); a collection of 12 stamps of the Republic of Panama (92608); Hungarian postage stamps issued 1913–1924 and received by the Post Office Department from the postal administration of Hungary (59 specimens) (93061); 3 specimens each of the following United States postage stamps: 15-cent air-mail stamp, issue of 1926; 2-cent Battle of White Plains commemorative stamp, issue of 1926 (6 specimens) (94216); 3 specimens of the United States 20-cent air-mail stamp, issue of 1927 (95680); one set, 21 specimens, of Philippine commemorative stamps (96945).

Division of dead letters and dead parcel post: 84 pistols and revolvers (96905).

POTEZ, HENRY, Paris, France: Photograph of the airplane "Henry Potez," type 28, with which Captain Arrachart made the flight from Paris to Saigon without landing (95360).

POTTS, F. A., Fortuna, Porto Rico: Specimen of Porto Rican short-eared owl (96395).

POWELL, J. W., Mesilla Park, N. Mex.: Plant (92783).

PREBLE, EDWARD A., Washington, D. C.: Sponge (?) from a fresh-water pond, Rocky Point, Oreg., collected by Mr. Cone (94749).

PRECANCEL STAMP SOCIETY, Altoona, Pa. (through John L. Parker, president): 900 precanceled postage stamps (94247).

PRIEST, Mrs. G. C., Key Largo, Fla.: Small collection of ground pearls (91812).

PRINCETON UNIVERSITY, Princeton, N. J.: 2 specimens of a Silurian fish (96939).

PRIOR, GEORGE T. (See under British Government, British Museum (Natural History).)

PROCTOR, JOHN C., Washington, D. C.: 10 family portraits (96252, loan).

PUBLIC LIBRARY, MUSEUM, AND ART GALLERY, Perth, Western Australia: Collection of approximately 75 aboriginal specimens from Australia (94717, exchange).

PUGH, F., Winnipeg, Manitoba: 41 original photomicrographs of textile fibers taken in the laboratory of the Winnipeg Research Bureau (97099).

PURDUE UNIVERSITY, La Fayette, Ind. (through Prof. J. J. Davis): Type specimen of a beetle (93602).

PURPUS, Dr. C. A., Huatusco, Vera Cruz, Mexico: 210 plants from Mexico (92812, 93216, 93235, 93417, 93584, 93837, 94516, 94781, 94981, 95118, 96005, 96803): 4 plants (92643, exchange); seeds of a plant (96139).

PURPUS, Dr. J. A., Darmstadt, Germany: 2 plants (92418, exchange).

PUTNAM, Dr. H. A., Monrovia, Calif.: Insect (92589).

RADCLIFFE, J. H., Woodhaven, Long Island, N. Y.: 4 photographs entitled "Washington Elm," Cambridge, Mass.; "Sulgrave Manor," Northants, England; "Monticello," Virginia and "Polo Pony" (93390).

RAFAEL, Rev. Brother. (See under Colegio Biffi.)

RAGAN, Mrs. ADA E., Osprey, Fla.: 4 pottery fragments from Florida (90643).

RANDALL, C. E., Bath, Jamaica: A rare and beautiful species of butterfly (93170); 2 plants from Jamaica (93388).

RANDS, E. P., Portland, Oreg.: Abnormal horn ? (91599).

RANSIER, H. E., Manlius, N. Y.: 5 plants from New York (92809).

RANSOM, FRANK T., Greenwood, Miss.: 1,300 Carboniferous fossils from Missouri (86357).

RAYMENT, TARLTON, Sandringham, Australia: 41 specimens, representing 16 determined species, of Australian bees (94989, exchange).

REAMER, LOUIS, Orange, N. J.: Examples of 3 minerals from Madagascar (96760, exchange).

RECORD, Prof. SAMUEL J. (See under Yale University, School of Forestry.)

REDFIELD, ROBERT, Roslyn, Va. (through Donald C. Peattie): 31 plants collected in Morelos, Mexico (96864).

REDWOOD, Mrs. FRANCIS T., Baltimore, Md.: 2 swords of the Colonial period (92090).

REED, ELMER, Juneau, Alaska: 19 photographs of Eskimo (93148).

REED, W. S., Sanibel, Fla.: Dried specimen of fish (92618).

REESE, Miss MARGARET D., Alexandria, Va. (through Dr. Edward T. Wherry): 22 plants from Newfoundland (93579).

REESIDE, JOHN B., Jr., Washington, D. C. (See under Dr. J. E. Hoffmeister, Prof. J. Harlan Johnson, Maurice A. Rollot, and J. H. Sinclair.)

REEVES, Capt. S. W., United States Army, Medical Corps, War Department, Washington, D. C.: 2 insects, and a large crab from Alaska (93000, 96925).

REICHE, Dr. CARLOS, Mexico, D. F., Mexico: 2 plants from Mexico (96400).

REID, E. D., Washington, D. C.: 2 skeletons of fishes from the Washington market (95163.)

REID, E. D., and C. S. EAST, Washington, D. C.: 15 fishes from Chesapeake Bay, Md. (93234).

REKO, Dr. Blas P., Mexico, D. F., Mexico: 238 plants from Mexico (94564, 95904, 96655, 97089).

REMINGTON ARMS CO. (INC.), Bridgeport, Conn.: Display board of 147 specimens of ammunition products of the company (96658).

RENTSCHLER, Dr. H. C. (See under Westinghouse Lamp Co.)

RHODE ISLAND STATE BOARD OF AGRICULTURE, Kingston, R. I. (through A. E. Stene): 2 larvae of insects (93201).

RHODUS, Howard J., Mexico, Mo.: Iron medal commemorating the sinking of the British steamship "Lusitania" by a German submarine, May, 1916 (94196).

RICE, George S., Washington, D. C.: Slab of oak wood showing the township and range figures in reverse from an overgrowth on the blazed face of a "witness tree," marking a corner of Ottumwa Township, Wapello County, Iowa, surveyed in 1834 or 1835 (92433).

RICHARZ, Prof. Stephen, Techny, Ill.: Specimen of the mineral magnalite from Oberpfalz, Bavaria (96645).

RICHMOND, Dr. Charles W., Washington, D. C.: 13 bird skins, representing 8 genera and 10 species new to the Museum collections (96455); 17 birds from Cold Spring, N. Y. (96803); 39 birds, mostly from South America, including 1 genus and 26 species new to the Museum (96911).

RIDGWAY, Robert, Olney, Ill.: Tree frog from Illinois (93483).

RIVES, Miss Isabel, Washington, D. C.: 2 dresses and a bonnet of the period of the Civil War (96408).

ROADS, Miss Katie M., Hillsboro, Ohio: Plant (92425); 41 plants from Ohio (92530, 92818, 92972, 94104).

ROBBINS, Benjamin H., Nashville, Tenn.: 2 specimens of chemicals for the Loeb Collection of Chemical Types (97682).

ROBERTS, H. H., San Antonio, Tex. (through Interior Department, United States Geological Survey): Tooth and fragmentary bones of a three-toed horse (96458).

ROBERTSON-MILLER, Mrs. Ellen, Coronado Beach, Fla.: 2 specimens of worms collected at Coronado Beach, Fla., and 9 specimens of marine invertebrates (92144, 96849).

ROBINSON, Col. Wirt, United States Army, West Point, N. Y.: Gecko, blind snake, 2 crabs, lizard, snake, 3 spiders, mollusk, 2 hawk moths, 1 ornithoptera, and 3 other moths, all from the Philippine Islands (93460, 94570, 96299); red-tailed hawk, goshawk, red-tailed hawk, and 2 red-shouldered hawks, all from New York (93926, 95180, 95742); 3 goshawks and 2 red-tailed hawks from New Jersey (94102) osprey from Florida (94608).

ROEBLING FUND, Smithsonian Institution: 4 examples of native iron from Buhl, near Weimar, Germany (89055); 8 small diamond crystals of unusual form from Brazil (96078); (through Commissioner of Indian Affairs and William A. Light, superintendent Truxton Canon Indian School and Agency, Valentine, Ariz.): A 672-pound meteoric iron found by Dick Grover in the Wallapai Indian Reservation, Arizona (96522).

ROEBLING, John A., Bernardsville, N. J.: The Washington A. Roebling collection of minerals (93518).

ROEBLING, Col. Washington A. (Fund), Smithsonian Institution: An iron meteorite from 10 miles northeast of Oakley, Cassia County, Idaho (91853); 1 lot of the mineral anauxite in cimolite from Bilin, Bohemia (93527); specimen of purpurite (94212); 2 specimens of meteoric irons, Campo del Cielo, Argentina, and Copiapo, Chile (94393);

ROEBLING, Col. WASHINGTON A.—Continued.
specimen of the mineral meionite from Cripple Creek, Colo., and 14 specimens of minerals from Franklin Furnace, N. J. (95152).

ROJAS, Sr. Prof. Rumbe Tomas, Cartago, Costa Rica: 13 plants from Costa Rica (93428, 95384); a phasmid (insect) (92478).

ROLLER, Mrs. L. L., Muskogee, Okla.: 4 plants (94730, exchange).

ROLLOT, Dr. MAURICE A., Bogota, Columbia (through J. B. Reeside, jr.): Fossil tooth of a horse from Nazareth, near Bogota, Department of Cundinamarca, Columbia (93266).

ROOSEVELT MEMORIAL ASSOCIATION (INC.), New York City (through Miss Gisela Westhoff, assistant secretary): Model of the proposed Roosevelt Memorial designed by John Russell Pope (94692, loan).

ROOSEVELT NEWSBOYS' ASSOCIATION, THE, Lynn, Mass. (through E. E. Keevin, Director): Bronze statue of the dog "Ladie Boy" by Bashka Paeff, cast from pennies contributed by the newsboys of the United States in memory of their friend, the late Warren Gamaliel Harding (95429).

ROOT, A. I., CO., Medina, Ohio, and C. P. Dadant & Sons, Hamilton, Ill.: Glass and mahogany observation beehive (93380).

ROOT, HENRY J., Omaha, Nebr.: Mounted specimen of hybrid between redhead and pintail ducks (94214).

ROSENBERG, E., Copenhagen, Denmark (through Dr. A. G. Boving): 26 specimens of early stages of European beetles, representing 11 species (94098).

ROSS, LLEWELLYN, Eugene, Oreg.: Specimen of shrimp collected by the donor at Coos Bay, Oreg. (92802).

ROST, E. C., Alhambra, Calif.: 2 plants from Arizona (95633).

ROTH, Dr. GEORGE B., Washington, D. C.: 16 old surgical instruments (92573, deposit); young Carolina chickadee, a nest and 4 young in alcohol (96780).

ROUILLARD, C. M., Siquinala, Guatemala, Central America: Small collection of insects, chiefly parasites on the migratory locust in Guatemala (92990); 340 flies and 1 bee collected in Guatemala (96298).

ROUNDY, P. V., Washington, D. C.: Approximately 30 specimens of land and fresh-water shells from the vicinity of Ann Arbor, Mich. (93604).

ROUTH, Jos, Tallevast, Fla.: Limestone arrowhead found in Manatee County, Fla., about 5 miles from Tallevast (92505).

ROYAL ONTARIO MUSEUM OF MINERALOGY, Toronto, Canada: 12 mineral specimens and a polished slab of porphyritic syenite (95052, exchange).

ROYAL PHOTOGRAPHIC SOCIETY, London, England: 201 pictorial photographs (93138, loan).

ROYAL SCOTTISH MUSEUM, THE, Edinburgh, Scotland (through P. H. Grimshaw): 4 specimens of flies from Scotland (96246).

RUBBER ASSOCIATION OF AMERICA, THE, New York City: A collection of objects and photographs illustrating the manufacture and applications of rubber (92988).

RUDGE, WILLIAM E., New York City: Unbound and unstitched copy of the four-volume work by Lawrence Park, entitled "Gilbert Stuart. An Illustrated list of his works," printed by the donor (93171); 2 aquatone printing plates and 2 proofs therefrom (93496); 12 printed signs of the Zodiac called "A Series of Quaint Astronomical Nativity Folders" designed by Edna L. Freeman, and a book entitled "The Gospel of Saint Luke" (96507); 32 samples of letter press printing and halftones in color (96429).

RUEDEMANN, Dr. RUDOLF. (See under New York State Museum.)

RUNYON, ROSKAT, Brownsville, Tex.: 49 plants from Texas (92464, 92967, 96800); photograph of a plant (96011).

RUSSELL, Dr. F. F. (See under International Health Board of the Rockefeller Foundation, New York City.)

RUTH, Prof. ALBERT, Polytechnic, Tex.: 50 plants (93192, 93240, 93831, 94980, 96631, 97067); 10 plants from Texas (93476).

RUTHERFORD, Mrs. SOPHIA L. (through the Washington Loan & Trust Co., Washington, D. C.): A Duchess lace fan (94506, bequest).

RYDER, CHAUNCEY F., New York City: 33 dry points, 2 lead-pencil drawings, 15 lithographs for special exhibition of his work (95404 loan); 3 dry points and 1 lithograph (96181).

SAGEHORN, FRED, Stuarts Point, Calif.: 5 mollusks (95412).

ST. PROCOPIUS COLLEGE, Lisle, Ill. (through Hilary S. Jurica): Beetle (94230).

SALAS, Sr. Don JOSÉ GARCIA, Guatemala, Central America: 21 plants from Guatemala (95247).

(See also under Guatemala, Government of.)

SALMAN, K. A. (See under Salvador, Government of, Direccion General de Agricultura.)

SALMONS, F. A., San Diego, Calif. (through Dr. W. T. Schaller): Specimen of yellow apodimene from Pala Chief mine, Pala, Calif. (96778).

SALT, GIBSON, Santa Marta, Colombia: 12 plants from Santa Marta, Colombia (96391).

SALVADOR, GOVERNMENT OF, DIRECCION GENERAL DE AGRICULTURA, San Salvador, El Salvador, Central America: (Through K. A. Salman) 2 specimens of snout beetles, taken from a coffee tree in San Salvador (96073); (through Sr. Dr. Salvador Calderon) 10 plants from Salvador (92423), 3 plants from Central America (92775), 4 plants from Salvador (93238), 10 plants (94116), specimen of fungus and a plant photograph (96179).

SALVADOR, GOVERNMENT OF—Continued.

SAMUELSSON, Prof. G. (See under Naturhistoriska Riksmuseets Botaniska Afdelning, Stockholm, Sweden.)

SANSOM, FRANK, Joplin, Mo. (through Department of Commerce, Bureau of Mines): Large specimens of sphalerite and galena, with accompanying chalcopyrite, from the Crutchfield mine, north of Joplin, Mo. (93276).

SARGENT, D. L., Logan, Utah: 14 amphipods (94839).

SAUR, BELDEN C., Norwood, Ohio: 2 plants (93415, exchange).

SCALCO, SALVATORE. (See under Salvatore Fusco.)

SCENE-IN-ACTION CORPORATION, Chicago, Ill.: An animated model of a forest fire (93950).

SCHALLER, Dr. W. T., Washington, D. C.: Examples of the mineral romeite from Italy and Brazil (96938).

(See also under William M. Balling and F. A. Salmons.)

SCHALLERT, Dr. P. O., Winston-Salem, N. C.: 33 plants from Tibet (93172).

SCHAUS, Dr. WILLIAM, Washington, D. C.: 10,000 moths from Incachaca, Bolivia (94987).

SCHENCK, HUBERT G., Stanford University, Calif.: 6 specimens of fossil crab remains (95015).

(See also under Stanford University.)

SCHIEFFELIN & CO., New York City: 1 specimen each of 3 drugs to be used in an exhibit of official drugs added to the United States Pharmacopoeia X (92551).

SCHLEMMER, CHARLES C., Cincinnati, Ohio: 3 Ordovician trilobites (95871); 500 specimens of Silurian fossils from Centerville, Ohio (96492, exchange).

SCHLESCH, Hans, Copenhagen, Denmark: Approximately 350 specimens of shells from northern Europe and Greenland (94783).

SCHMID, Edward S., Washington, D. C.: 3 birds (92574); 2 birds, a grosbeak from South America, and a cockatoo parrot from Australia (93946); specimen of Lilian's lovebird, representing a species new to the Museum collections (94112).

SCHMIDT, Heinrich, San José, Costa Rica: 4 specimens of flies with puparia of three (95978).

SCHMIDT, Prof. Peter, Leningrad Union of Socialistic Soviet Republics in Europe: 8 fishes (93821, exchange).

SCHMITT, Dr. Waldo L. (See under Walter Rathbone Bacon Scholarship.)

SCHOENBERGER, Paul, Belton, Mont.: 5 specimens of flies (96241).

SCHOENBORN, Miss Theresa F., and William E. Schoenborn, Washington, D. C.: 10,574 specimens of Lepidoptera from the eastern United States and Europe, being the collection of the late Henry F. Schoenborn, Washington, D. C. (96486).

SCHOENBORN, William E. (See under Miss Theresa F. Schoenborn.)

SCHRAMM, Rev. F. E., Nicaragua, Central America: 64 plants from Nicaragua (94217).

SCHULZ, Miss Ellen D., San Antonio, Tex.: 41 plants from Texas (92485).

SCHWARZ, Sr Ing. Theo, Durango, Mexico: 2 plants (93935).

SCOFIELD, John, Washington, D. C.: 4 amphipods from a small brook in Georgetown, D. C. (93033).

SCOTT, Dr. Alfred, Athens, Ga.: Specimen of chemical for the Loeb collection of chemical types (97636).

SCOTT, Capt. J. F. R., United States Army, Washington, D. C.: Necklace with 3 ancient human effigy wood carvings, coiled basket, and 9 photographs, all of the Seri Indians, Calif. (93470).

SCOTT, Dr. Will. (See under Indiana University.)

SCULLEN, Prof. H. A. (See under Oregon Agricultural College).

SEABOARD AIR LINE RAILWAY CO., Development Department, Savannah, Ga.: 2 forest fire preventive placards (94561).

SEIFRIZ, Dr. William, Philadelphia, Pa.: 5 photographs of plants (95414, exchange).

SELIGMANN, REY & CO. (INC.), ARNOLD, New York City: 24 eighteenth century French color prints, for special exhibition, from January 3, to January 29, 1927 (91565, loan).

SELLERS, Walter W., Washington, D. C.: Bone handled dirk owned by Henry C. Sellers, ship carpenter, during the Civil War (95750).

SERPIERI, Madame Fernand, Athens, Greece (through D. F. Hewett, Washington, D. C.): Greek pottery lamp (92993).

SETCHELL, Prof. W. A., Berkeley, Calif.: 4 crinoids from the Tonga Islands (93395).

SHANNON, Earl V., and James BENN, Washington, D. C.: 3 fishes from Oxen Run, Anacostia, Md. (96924).

SHANTUNG CHRISTIAN UNIVERSITY, Department of Biology, Tsinan, China (through Arthur Paul Jacot): Approximately 158 specimens of miscellaneous insects collected in China (92442).

SHAW, T. H., Pacific Grove, Calif.: 75 marine copepods from a small pool on the Bird Rock, Pacific Grove, collected by the donor (91690).

SHEAR, Dr. C. L., Washington, D. C.: Plant from West Virginia (92486, exchange).

SHEDD, Miss Helen S., Washington, D. C.: A small umbrella swift used for holding skeins of yarn (94131, loan).

SHENON, Phil., Gilman, Col.: Specimen of the mineral mimetite from Bilboa Mine, Santa Ana, Zacatecas, Mexico (96283).

SHERMAN, JOHN D., Jr., Mount Vernon, N. Y.: 20,000 water beetles, representing approximately 400 North American and 200 additional exotic species, including types, cotypes, and paratypes of the Fall species (93003).

SHINER, V. J., Laredo, Tex.: 9 plants from Texas (97083).

SHOEMAKER, C. R., Washington, D. C.: Approximately 101 specimens of crustaceans (96471).

SHOEMAKER, Ernest, Brooklyn, N. Y.: Very rare beetle (92640).

SHRINER, RALPH L., Geneva, N. Y.: 2 specimens of chemicals for the Loeb collection of chemical types (96502).

SIAMESE NATIONAL LIBRARY, Bangkok, Siam (through Dr. Hugh M. Smith): Manuscript of Buddhist scriptures on palm leaf strips (96798).

SIMONDS, Prof. F. W. (See under Texas, University of).

SINCLAIR, J. H., New York City (through J. B. Reeside, jr.): 100 specimens of Cretaceous invertebrates and 25 fish teeth and bones from eastern Ecuador (96267).

SINE, FRANK, Maurertown, Va.: Jumping mouse (96890).

SIRRINE, Miss EMMA F., Washington, D. C.: Plant (96453).

SKEELS, H. C. (See under Agriculture, Department of, Bureau of Plant Industry).

SLATER, Mrs. H. D., El Paso, Tex.: Plant from New Mexico (93006).

SLAVIK, PETER, Prague, Czechoslovakia: 2 examples of lead-silver ores showing vein structure, from Pribram (96290).

SMITH, Mr. ALBERT C. (See under Smithsonian Institution, National Museum, collected by members of the staff.)

SMITH, Mrs. CLARENCE M., San Francisco, Calif.: 21 sun-baked fragments of pottery and 7 fired fragments of pottery found in a tomb near Heijo, Korea (95362).

SMITH, EARL, Alpena Pass, Ark.: Specimen of beetle (92835).

SMITH, Dr. FRANK, Urbana, Ill.: 10 earthworms, including the holotypes of 2 new species, together with 511 microscopic slide mounts of serial sections of earthworms examined by Doctor Smith (92801).

SMITH, Dr. HUGH M., Bangkok, Siam: 25 specimens of crustacea including the type of a parasitic copepod; a lot of mollusks; an amphibian, some insects, and skin and skull of a mammal, collected in Siam by the donor in the course of an investigation of the Siamese fisheries (90641); 949 bird skins and 10 skeletons of birds, a collection of mammals, mollusks, 2 turtles, 2 bamboo bows, 4 dried-clay balls used with string bow, all from Siam (92813); 9 orthopterous insects from Siam (93285); 363 bird skins, 13 skeletons of birds, and 85 mammal skins and skulls from Siam (94971); reptiles, amphibians, insects, scorpions, spiders, mollusks, squids, crabs, shrimps, fishes, bats, and echinoderms from Siam (95528); 55 reptiles and amphibians from Siam (95675). (See also under Siamese National Library, Bangkok, Siam.)

SMITH, JOHN, Washington, D. C.: Starling from Washington, D. C. (94519).

SMITH, LESLIE M., Berkeley, Calif.: 2 insects (paratypes) (96411).

SMITH, RALPH C., Washington, D. C.: 28 examples of modern French bookcovers, bindings, and books, collected in Paris, France, in July, 1926 (93289, loan).

(See also under Georges Plasse.)

SMITH, V. J. (See under West Texas Historical and Scientific Society.)

SMITH, WILLIAM JAMES, jr., Washington, D. C.: Flying squirrel from Chain Bridge (94963).

SMITHSONIAN-CHRYSLER EXPEDITION: 55 bird skins, 4 eggs, 2 nests, approximately 114 mammals and 2 shells from Tanganyika

SMITHSONIAN-CHRYSLER EXPEDITION—Continued.

Territory, East Africa (95760); collection of reptiles and amphibians from Africa (96017).

SMITHSONIAN INSTITUTION:

Etching, "Gloucester Fisherman," by Carl J. Nordell (deposit, 95510).

Bureau of American Ethnology:

Collection of archeological and skeletal material secured along the upper Columbia River, Wash., during the spring of 1926 by Mr. Herbert W. Krieger (91522); skeleton of an Indian medicine-man, or shaman (less the skull), 2 femora of another shaman, and 2 bleached bones from the skeleton of a chief, all Tlinkit, of Alaska, collected by Dr. A. Hrdlička (92528); anthropological, geological, and biological material collected by Doctor Hrdlička in Alaska during the summer of 1926 (93522); material collected during the summer of 1926 in Louisiana and Mississippi by Henry B. Collins, jr. (93607); small collection of shell beads and bracelets, and stone implements, obtained from the ruin of Las Trincheras in the Altar district of Sonora by S. A. Williams (7 specimens) (94202); archeological specimens from Arkansas, Colorado, Florida, Kentucky, and Tennessee, secured by various collectors for the Bureau (94776); 10 master records of Hopi Indian songs recorded during the summer of 1926 at the Grand Canyon by Dr. J. Walter Fewkes, and 2 master records of a speech by William Jennings Bryan (95011); carved and painted wooden figure representing a Hopi snake priest (95372); 4 Indian crania from the Elden Pueblo, Ariz., and 2 from Montezuma Canyon, Colo. (96091); collection of archeological objects gathered for the Bureau at Indian Mound, Tenn., by Dr. Walter Hough (96020); archeological material collected for the Museum at Eldon Pueblo, Ariz., by Doctor Fewkes during the summer of 1926 (96923).

SMITHSONIAN INSTITUTION—Con.

Bureau of American Ethnology—Continued.

National Museum, collected by members of the staff: Bassler, R. S.: Approximately 5,000 invertebrate fossils from the Paleozoic and Mesozoic rocks of Germany and the Cenozoic formations of France, including washings with microfossils from various classical localities (94219). Foshag, W. F.: Collection of minerals and ores made in Mexico during the summer of 1926, under the joint auspices of Harvard University and the United States National Museum (88320). Gidley, J. W.: A palate with both upper teeth of a mammoth, with associated foot bones, and a lower jaw with one tooth and a few associated bones of an edentate, from Oklahoma (95462); miscellaneous bones and teeth of fossil elephant and smaller mammals from Sarasota and Zolfo Springs, Fla. (96603). Killip, E. P., and Albert C. Smith: 9,500 plants from Colombia (93342). Maxon, W. R.: 11,000 specimens of plants, largely ferns, also a bat, a tree toad, birds eggs, and 2 wood specimens collected in Jamaica (92098); plant from Jamaica (92488). Merrill, George P.: Miscellaneous geological material from various European localities (93194). Pohl, Erwin R.: Approximately 15,000 specimens of Middle and Upper Devonian invertebrates and fossil plants from western New York and Ontario, Canada (92568).

SMITHSONIAN INSTITUTION—Con.

National Museum, collected by members of the staff—Contd.

Poole, A. J., and Remington, Kellogg: 22 skulls and 6 skeletons; also a collection of reptiles, batrachians, birds, mollusks, crustaceans, fishes and insects, all from Hatteras, N. C. (93079). Resser, Charles E., and Pohl, Erwin R.: 800 specimens of invertebrate fossils from the Devonian and Carboniferous, 5,000 from the Cambrian rocks of Montana and Utah, and 500 from the Canadian of Utah (93559). Rose, J. N.: 25 specimens of algae collected in Atlantic City (93287). Shoemaker, C. R.: 3,357 specimens of marine invertebrates, together with a small collection of corals, mollusks, echinoderms, insects, and fishes collected at the Dry Tortugas during July and August, 1926, under the auspices of the Carnegie Marine Biological Laboratory (93400). Watkins, W. N.: 9 pieces of American elm wood (97100).

(See also under Bradshaw H. Swales and A. Wetmore.)

National Museum, obtained by purchase: 100 specimens of plants from Trinidad (93339); a partial skeleton of a phytosaurian reptile from the Triassic near Lander, Wyo. (93235); 105 plants from Missouri and Kansas (95001); 5 colored casts of finds of prehistoric man (91573); cast of a fossil bird from the original in the British Museum (92564); 38 articles of Makah and other Indian handiwork (96074); 3 pieces of pottery excavated near Flagstaff, Ariz. (96065); fossil fish from Grayson County, Tex. (97104); 16 casts of the lower jaws, etc., of the "krapina man" (96059); 200 plants from Japan (96628);

SMITHSONIAN INSTITUTION—Con.

National Museum, obtained by purchase—Continued.

75 specimens of mosses (North American Musci Perfecti) Nos. 1–75 (96416); 300 plants from northern California and southern Oregon (95625); 50 specimens of North American mosses (Musci Acrocarpi, Fascicles 24 and 25 (92800, 96006); 5 iron spearhead and 3 coins, all Chinese (95173); 15 small mammal skins with skulls (96942); 50 specimens of lichens (Fascicles 4 and 5, Lichenes Exsiccati) (93443, 93648); fossil squid from Kansas (93387); sheep-horn spoon from one of the prehistoric Supai houses in the Grand Canyon, Ariz. (94089); 2 bronze copies of the Theodore Roosevelt distinguished service medal (92441); 12 reptiles and amphibians (92047); skeleton of a bird from Madagascar (96498); 408 bird skeletons from Tanganyika (96499); gavial skin (96926); 7 specimens comprising fish and reptilian remains from the Niobrara Chalk (Upper Cretaceous) of Kansas (92560); skull of a turtle and fragmentary turtle remains (95402); American military sword of the early part of the nineteenth century (92218).

National Museum, made in the Museum laboratories: 4 colored casts of a leaf-shape flint blade found on a ranch 5 miles northeast of Anchorage, Alaska, by W. G. Marsh (93489); cast of the type of a fossil bird (94592); 4 casts of a dark steatite bannerstone from near Roxboro, N. C., and 3 casts of a grayish steatite bowl found near Wilkesboro, N. C., the originals of which were sent in by the North Carolina State Museum (Harry T. Davis) (94597).

SMITHSONIAN INSTITUTION—Con.
National Zoological Park: 15 birds (92465); 2 eggs of blue goose (92628); 6 birds (92953); skins and skeletons of a gazelle, hedgehog, Tasmanian devil, sloth, kangaroo, and an alcoholic specimen of a lemur (92986); 4 birds (93449); 11 birds (93505); skin and skeleton of a lynx, skin and skeleton of a porcupine, and skin and skeleton of an antelope (94511); 5 bird eggs (94551); 77 birds, 6 frogs, 21 lizards, 9 snakes, 27 mammals, and 48 turtles, from British East Africa, Egypt, Ceylon, and India, collected by the Smithsonian-Chrysler Expedition (94694); 5 birds (94938); 32 birds (95541); 10 bird eggs (95627); 25 mammals (95905); 10 mammals (96305); 10 mammals (96611); 24 birds (96910); horseshoe crab collected by J. D. Nowicki at Atlantic City, N. J. (96914); 11 mammals (97006); 13 mammals (97142).

SNURE, Rosser, Silver Spring, Md.: Starling from Maryland (93448).

SNYDER, T. E. (See under Ferdinand Nevermann.)

SOCIETE ANONYME NIEUPORT-ASTRA, Issy-les-Moulineaux (Seine), France: Photograph of the Nieuport-Delage airplane, model of 1924 (96226).

SOPER, H. P., Landover, Md.: Great horned owl (93225).

SOUTH DAKOTA, UNIVERSITY OF, Vermillion, S. Dak. (through Prof. W. H. Over): 155 plants from South Dakota (94700).

SOUTHERN BIOLOGICAL SUPPLY CO., New Orleans, La. (through Percy Viosca, jr.): 6 frogs and 2 salamanders from Louisiana (95345).

SOUTHERN RAILWAY SYSTEM, development service, Washington, D. C. (through E. F. Kennedy, chief clerk): Large bowl turned from curly yellow poplar wood (96759).

SOUTHWORTH, Charles, Thedford, Ontario, Canada: 300 Devonian fossils from Ontario, Canada (94075).

SOWERBY, Arthur deC. (See under Robert Sterling Clark.)

SPRAGUE, T. A. (See under British Government, Royal Botanic Gardens.)

SQUIBB & SONS, E. R., New Brunswick, N. J.: 3 medicinal substances made official in the United States Pharmacopoeia X (93464).

STACHER, S. F., Crown Point, N. Mex. (through E. B. Merritt, Washington, D. C.): 4 photographs of old Navaho scouts (93488).

STAHEL, Gerold. (See under Agricultural Experiment Station, Department van den Landbouw.)

STANDARD OIL CO. OF CALIFORNIA, San Francisco, Calif. (through C. E. Persons): 2 photographs of a plant (95151).

STANDLEY, Mrs. Florence A., Fort Myers, Fla.: Orchid and 2 plants from Florida (92776, 94490).

STANDLEY, Paul C., Washington, D. C.: 200 plants from Florida, also a small collection of marine shells and a spider (95749).
(See also under Dr. S. F. Blake.)

STANFORD UNIVERSITY, Stanford University, Calif.: (through Mrs. Roxana S. Ferris) 101 plants from the Tres Marias Islands (92023, exchange), 27 specimens of ferns from Mexico (94250, exchange), 3 photographs of plants (94345, exchange); (through Mrs. Ida S. Oldroyd) 36 specimens, 13 species of fossil crustaceans described in Bulletin 138, United States National Museum (95753); (through Dr. H. G. Schenck) 4 specimens of fossil crustacea from Oregon and California (96271).

STANSCH, Carlos. (See under Mexico, Government of, Direccion Forestal y de Caza y Pesca.)

STANTON, Mrs. Stephen Berrian, Washington, D. C.: Beaded crocheted bag, about the late eighteenth

STANTON, Mrs. STEPHEN BERRIAN—Continued.
century (94379); 5 pieces of pewter, consisting of a flagon, sirup pitcher, 2 plates, and a gravy bowl (96008); hand embroidered handkerchief with monogram, made in Switzerland; 2 copper snuff boxes of Dutch make, and a condiment set (96654).

STARR, DOUGLAS N., Washington, D. C.: 2 penis bones of wolves (93255); 2 canines of the saber-toothed tiger, a bison tooth and 5 incisors of carnivores (94726).

STATE, DEPARTMENT OF: Oil painting by Charles Bryant, entitled "The American Battle Fleet in Sydney Harbor," presented to the United States by the citizens of New South Wales (94500).
(See also under Hubert Hardwick and O. Gaylord Marsh.)

STEELE, E. S., Washington, D. C.: Collection of plants, chiefly compositae, estimated at 1,000 specimens (97102).

STENE, A. E. (See under Rhode Island State Board of Agriculture.)

STEPHENS, Mrs. KATE, San Diego, Calif.: 31 specimens of fossil crustacea (95877).

STERNBERG, GEORGE F., Oakley, Kans.: Fossil bird bones (95085).

STEVENS, Miss BELLE A., Friday Harbor, Wash.: 6 hermit crabs, 3 sponges, and 10 worms collected by the donor off Reed Rock, near Friday Harbor (92416); 8 Xanthid crabs collected by Miss Stevens at the northeast corner of Brown Island, Friday Harbor (94751); 10 specimens of crustaceans (94965).

STEVENS, J. P., Atlanta, Ga.: One of a limited number of watches made by the J. P. Stevens Watch Co., Atlanta, Ga., embodying the Stevens patented regulator (92231).

STEVENSON, JOHN A. (See under Agriculture, Department of, Bureau of Plant Industry).

STEWART, M. A., Washington, D. C.: Beetle and a larva from Chain Bridge, D. C. (90242).

STIRLING, M. W., Berkeley, Calif.: Collection of approximately 3451 ethnological specimens secured by the Stirling Dutch-American expedition to New Guinea in 1926 (87036).

STOCKARD, Prof. A. H. (See under Wyoming, University of.)

STONE MOUNTAIN GRANITE CORPORATION, Stone Mountain, Ga.: A 6-inch cube of Stone Mountain granite (95395).

STORY, Miss ISABELLE F. (See under Union Pacific System.)

STUDHALTER, Prof. R. A., Lubbock, Texas: 175 plants from western Texas (92785).

STURDEVANT, GLEN E., Grand Canyon, Ariz.: Plant from Arizona (90907).

STURGEON, SAM, Gillette, Wyo.: Specimen of pseudoscorpion (96900).

STURGES, LEE, Elmhurst, Ill.: 55 etchings for special exhibition of his work from March 28 to April 23, 1927 (95659, loan); 4 etchings by the donor (90612).

SUN ENGRAVING CO., (LTD.), THE, Watford, England: 10 examples of the "Pantone" method of preparing smooth metal plates for printing pictures (96180).

SWALES, B. H., Washington, D. C.: Pair of birds from Madagascar (92629); skin of a hawk from Madagascar, a species new to the Museum (92819); skin of a bird belonging to a genus new to the Museum collections (93503); skin of a starling from Assam, a subspecies new to the Museum collections (93987); 2 Arctic horned owls, and a hawk owl from Minnesota (94052); 8 bird skins, chiefly from the Andaman Islands, representing 4 species new to the Museum collections (94059); 100 bird skins from Brazil, including a genus new to the Museum (94323); 2 skins of a tinamou from Ecuador (94340); 3 rough-

SWALES, B. H.—Continued.
legged hawks from Minnesota (94485); 6 bird skins representing 5 species new to the Museum collections (94948); 5 bird skins, including 3 forms new to the Museum (94959); 25 bird skins, mostly from West Africa, representing 21 forms new to the Museum (95520); 21 bird skins from Argentina and Bolivia, including 2 forms new to the Museum (95687); 5 bird skins and 1 skeleton from Madagascar, including a genus and 2 species new to the Museum (95755); 2 bird skins from Venezuela, including a genus new to the Museum (96300).

SWALES, B. H., and A. WETMORE, Washington, D. C.: Natural history material comprising 6 bats, bones of 4 species of extinct mammals, 206 birds, 64 bird skeletons, 10 bird eggs, 1 bird nest, 9 lots of mollusks, 133 insects, 1 plant, 3 beeswax candles, and the following specimens in alcohol: 24 birds, 6 bats, 8 snakes, 49 lizards, 10 frogs, 11 fishes, 9 crabs, 2 lots of earthworms, and 2 scorpions, collected for the Museum by Dr. A. Wetmore in Haiti and Santo Domingo in the spring of 1927 (97353).

SWARTZ, Capt. Gideon W., Huntsville, Ala.: A "spin-ginner," a machine for ginning, carding, and spinning cotton, made by J. & T. Pearce, Cincinnati, Ohio, about 1840 (95535).

SWEET, A. T., Washington, D. C.: 60 plants from Haiti (96417).

SWETMANN, Edwin, Seward, Alaska (through Dr. A. Hrdlička): 2 baskets and a basketry mat from Nunivak Island and an Attu fish basket (92451).

SWOPE, Mrs. G. A., Grants Pass, Oreg.: Piece from old hand-woven coverlet in block pattern which had been in the donor's family about 200 years (95859).

SYDOW, H., Berlin, Germany: Plant from Costa Rica (95159).

TABER, W. B., Jr., Kansas, Ill.: Specimen of fly, a bird parasite, from red-tailed hawk (94251).

TALBOT, M. W. (See under Agriculture, Department of, Bureau of Plant Industry.)

TANNERS' COUNCIL OF AMERICA, New York City: A collection of specimens and photographs illustrating the manufacture and applications of leather (92089).

TATE, Miss Lola, Washington, D. C.: American costumes of the period of the Civil War (93161).

TATE, W. J., Colnjock, N. C.: Tooth of a small whale (92770).

TEISSEIRE, Prof. Auguste, Colonia, Uruguay: Approximately 75 specimens of fresh-water bivalve shells from Uruguay (95361, 96803).

TELL, William, Austin, Tex.: 5 plants from Texas (96626).

TEXAS, UNIVERSITY OF, Austin, Tex.: (Through Prof. B. C. Tharp) 78 plants from Mexico (93577); (through E. R. Boguesch) 400 plants from Texas (93934, 97005); 66 plants from Texas (94953); (through Dr. F. W. Simonds) a portion weighing 1,405 grams of a meteoric stone from Florence, Williamson County, Tex. (97015, exchange).

THAANUM, O., Honolulu, Hawaii: 61 specimens, 36 species, of marine shells and 3 echinoderms collected in Japan by J. B. Langford (93005).

THACKERY, Frank A., Indio, Calif.: Plant from California (93849).

THARP, Prof. B. C. (See under Texas, University of.)

THAXTER, Prof. Roland. (See under Harvard University, Cryptogamic Herbarium and Laboratories.)

THELLUNG, Prof. A., Zurich, Switzerland: 2 plants (95343).

THERIOT, J., Fontaine-la-Mallet par Montvilliers, France: 38 specimens of mosses collected in Mexico by Brother Amable (94724).

THOMAS CO., ARTHUR H., Philadelphia, Pa.: Specimen of chemical for the Loeb collection of chemical types (97634).

THOMPSON, GEORGE A., Baltimore, Md.: An old quadrant used in 1792 by an ancestor of the donor (93249).

THORNTON, CHARLES W., Nome, Alaska: 8 plants from Alaska (97133).

TIDE WATER HARDWOOD CORPORATION, Bacova, Va.: 20 specimen boards of commercial woods of the United States (92422).

TIMBERLAKE, P. H., Riverside, Calif.: 6 specimens of bees, representing 3 species, 2 of which are represented by paratypes (94708).

(See also under California Citrus Experiment Station, Riverside, Calif.)

TISDALE, Miss CARRIE S., Washington, D. C.: A time globe (93248).

TODD, Maj. M. L. (M. C.), Brownsville, Tex.: Skull, wing, and foot of a pigeon from Brownsville, Tex. (92848).

TOLMAN, R. P., Washington, D. C.: Box camera for 4 by 5 plates, made by the Rochester Optical Co., about 1890 (96647).

TREASURY DEPARTMENT:

Bureau of the Mint: Bronze medal commemorating the seventy-fifth anniversary of the founding of the Aztec Club of 1847 (92304); bronze portrait of Alexander Hamilton, first Secretary of the United States Treasury (2 copies) (92448); 81 medieval and modern European coins (92556); United States gold, silver, nickel, and bronze coins struck, 1920–1926 (48 specimens) (92468); 2 specimens each of the five and ten cent nickel coins of Yunnan Province, China (95583).

Public Health Service, Rosebank, Staten Island, N. Y. (through Dr. Carroll Fox): 2 adults, 2 puparia, and 2 larvae of flies (92348).

TREGO, Mrs. ELIZABETH Y., Washington, D. C.: 13 bird skins, 2 fishes, a collection of shells and an engraved ivory utensil (Chinese) (95667).

TREMOLERAS, JUAN, Montevideo, Uruguay: 29 specimens of flies (90497, exchange).

TZU-YÜAN, CHIU. (See under Peking, China, Government Historical Museum.)

ULKE, TITUS, Washington, D. C.: 3 plants from the District of Columbia (92778).

ULRICH, Dr. E. O. (See under Prof. Johan Kiaer.)

ULRICH, Dr. E. O., and H. D. MISER, Washington, D. C.: Specimen of fossil plant from 3 miles north of Springer, Okla. (96272).

UMBSTAETTER, ROBERT J., Washington, D. C.: Tibetan rosary called Go Mulia, composed of disks from the skull of a Lama, from Darjeiling, India (94998).

UNION OF SOUTH AFRICA, Pretoria:

Geological Survey: Series of South African platinum ores and additional rock specimens (95678).

UNION PACIFIC SYSTEM, Omaha, Nebr. (through Isabelle F. Story, editor, National Park Service): Photograph of the Grand Canyon of the Colorado, Ariz., and a photograph of Wall of Windows in Bryce Canyon, National Monument, Utah (95380).

UNITED CHEMICAL AND ORGANIC PRODUCTS CO., Chicago, Ill.: Eight ounces of photographic gelatin used in the aquatone process (96943).

UNITED PRODUCTS CO., (INC.), Los Angeles, Calif.: Specimens showing 3 stages in the manufacture of "Woodkets," a recently developed fireplace fuel (94576).

U. S. PHARMACOPOEIAL CONVENTION, (INC.), Philadelphia, Pa. (through Dr. E. Fullerton Cook, chairman, board of trustees): Documents concerning the 10th Revision of the United States Pharmacopoeia (94282).

UNIVERSITETETS BOTANISKE MUSEUM, Copenhagen, Denmark: 106 specimens of ferns from tropical America (93619); 2 plants from Costa Rica (94738); 398 plants (95886); 28 plants from Cuba and Haiti, and 21 photographs of type specimens of Chinese ferns (95986). Exchange.

UNIVERSITETETS ZOOLOGISKA MUSEUM, Copenhagen, Denmark (through Dr. K. Brunnich Nielsen): Washings from the Cretaceous of Denmark containing bryozoa and other fossils (95351, exchange).

URBAN, Dr. I. (See under Botanischer Garten und Museum, Berlin-Dahlem, Germany.)

UTAH AGRICULTURAL COLLEGE, Logan, Utah (through Mr. Herbert J. Pack): 6 specimens of insects (Hemiptera) (92290); (through G. F. Knowlton) 42 insects from Utah (92975, 94350, 94356, 94690, 95758).

UTAH, UNIVERSITY OF, Salt Lake City, Utah (through Prof. Asa A. L. Mathews): 12 specimens of Middle Cambrian fossils (94518).

VAIL, Floyd, New York City: 50 pictorial bromoils for special exhibition of his work from July 15 to October 1, 1926 (92532, loan).

VALERIO, Prof. Manuel, San José, Costa Rica, Central America: 56 plants and 20 ferns from Costa Rica (94601, 96036); 16 specimens of ferns (96092); approximately 30 amphipods (96617).

VAN DUZEE, M. C. (See under North Carolina Department of Agriculture.)

VAN FOSSEN, Miss Ella N., Edinboro, Calif.: Specimen of ant lion representing a rare species (92829).

VAN TYNE, Josselyn, Ann Arbor, Mich.: 5 specimens of fly larvae, parasitic on birds, from Barro Colorado Island, Canal Zone (93562).

VAUGHAN, Miss C. B., Savannah, Ga.: Plant (96018).

VAUGHAN, Prof. R. E., Royal College, Mauritius: 38 specimens of grasses and 30 ferns from Mauritius (92659, 96077).

VAUGHAN, Dr. T. Wayland, La Jolla, Calif.: Topotypes of a fossil coral from the Eocene of California (93153); a small collection of invertebrate fossils and a small shell from Japan (94739); 33 lots of miscellaneous invertebrate fossils (94779).

VAUPEL, E. H., Cincinnati, Ohio: 100 specimens of Early Silurian fossils from southwestern Ohio (94725); 260 specimens of rare Upper Ordovician and Early Silurian fossils from southwestern Ohio (95539); 600 fossil invertebrates from the Early Silurian Brassfield formation at Centerville, Ohio (95081).

VENICE CO., Venice, Fla.: Partial skeleton of a mammoth and miscellaneous fossil teeth discovered by the Venice Co. during excavations made near Venice, Fla. (94003).

VERRILL, Prof. A. E., Santa Barbara, Calif.: 12 specimens of marine mollusks from Kauai, Hawaii (90427).

VILLADOLID, Deogracias V., Los Banos College, Laguna, P. I. (through Mrs. Agnes Chase, Washington, D. C.): 16 parasitic copepods (95208).

VIOSCA, Percy, Jr. (See under Southern Biological Supply Co.)

VOLWILER, Dr. E. H. (See under Abbott Laboratories.)

VON ESCHEN, Prof. F., Salem, Oreg.: 3 shells from Neskowin, Oreg. (92382).

WAINWRIGHT, Mrs. Richard, Washington, D. C.: 24 specimens of Indian basketry, pottery, and stonework (93445).

WAKEMAN, James M., East Orange, N. J.: Babylonian cylinder seal of steatite (95133).

WALCOTT, Dr. Charles D. (See under C. A. Coffin.)

WALCOTT, Mrs. Charles D., Washington, D. C.: Wooden holy water vessel used by the Greek Orthodox Church in Constantinople (92797); lot of pottery fragments collected March 12, 1926, by the donor from shell heaps about 5 miles from Beaufort, S. C. (94777); 4 examples of wax resist dyeing, or batik, made by Sie King Goan, Solosche Batikkng, Solo, Java (96270).

WALES, George C., Brookline, Mass.: A set of 6 specimens showing the donor's method of making a lithograph in two printings (96866).

WALKER, E. P., Juneau, Alaska: 2 porpoise skulls, a young porpoise, and fragments of a whale skull, all from Alaska (96980).

WALTER, Mrs. A., Aurora, Ill.: Pair of shoes for a foot-bound Chinese woman (95629).

WALTER RATHBONE BACON SCHOLARSHIP, Smithsonian Institution (through Dr. Waldo L. Schmitt, Bacon scholar, 1925–1927): Natural history material comprising 570 crustaceans, 20 annelid worms, bryozoans, a sponge, 2 ascidians, 2 bottom samples, 2 tow-net samples, 11 water samples, a few dry echinoderms, a small collection of mollusks, 4 fishes, 1 turtle, and 3 frogs, collected in Brazil, Uruguay, and Argentina (92491); also a comprehensive collection of marine invertebrates, approximately 6,092 specimens, comprising crustacea, coelenterates and annelid worms collected by Doctor Schmitt on the west coast of South America (93322).

WALTHER, Eric, San Francisco, Calif.: 4 plants (90302, 90908, 97084).

WALTON, C. Petherbar, South Australia: 48 land shells from islands in Torres Strait, North Australia (96766).

WAR DEPARTMENT:

Office of the Adjutant General: 3 certificates concerning the award of the distinguished service cross to Pvt. Frank Arkman, Sergt. Carl C. Carter, and Sergt. Edward G. Mason, United States Army, in recognition of special services during the World War (94559).

Army Air Corps: 3 photographs illustrating the Air Corps good will South American flight (90250).

Ordnance, Office of the Chief of: Captured German artillery material (20 pieces) (84299); 8 United States Army rifles (91561).

Quartermasters Corps, Office of the Chief of: British, French, and German radio equipment of the period of the World War (73 specimens) (91551).

WARD, Melbourne, Sydney, New South Wales, Australia: 168 specimens of crustaceans, and 1 fish collected by Mr. Ward on the coast of New South Wales (92800, exchange); crab (95190).

WARD'S NATURAL SCIENCE ESTABLISHMENT, Rochester, N. Y.: Approximately 5,000 invertebrate fossils from various European Paleozoic and Mesozoic formations (94150, exchange); specimen of a Jurassic ammonite from Wyoming (95014); 250 specimens of invertebrates from the Warsaw and Knobstone groups of Indiana (95893, exchange); collection consisting of ostracods and bryozoa from the Eocene of southern Germany (95895, exchange).

(See also under British Government, British Museum (Natural History).)

WARFORD, Harry A., Philadelphia, Pa.: Specimen of the mineral andradite from Franklin Furnace, N. J. (96802, exchange).

WASHINGTON LOAN & TRUST CO., THE. (See under Mrs. Sophia L. Rutherford.)

WASHINGTON, UNIVERSITY OF, department of geology, Seattle, Wash. (through Prof. C. E. Weaver): 6 specimens of fossil crustacea from Washington (95000).

WATERSTON, Dr. J. (See under British Government, British Museum (Natural History)).

WATKINS, J. T., Lakeport, Calif.: Finely woven Attu basket from the Aleutian Islands (96972, exchange.)

WATKINS, Mrs. M. J., Taylor, Pa.: 2 small pieces of pear wood grown in Susquehanna County, Pa. (92867.)

WEATHERBY, C. A., East Hartford, Conn.: 115 plants from Connecticut (96402.)

(See also under Walter Deane.)

WEAVER, Prof. C. E. (See under Washington, University of, department of geology, Seattle, Wash.)

WEAVER, Robert D., Washington, D. C.: Plate with eagle and shield in colors made in Philadelphia before 1800 (95012).

WEBB, Rev. Charles W., Osprey, Fla.: 4 specimens of dragon fly nymphs from Florida (94785).

WEGENER, H. M., Los Angeles, Calif.: 8 specimens and 5 photographs of plants (92852, 93888).

WEHLE, Harry, New York City. (See under Metropolitan Museum of Art.)

WEIR, Dr. J. R. (See under Prof. F. L. Herrera.)

WELLS, R. C., Washington, D. C.: Small collection of minerals obtained by the donor in the Hawaiian Islands (94973).

WELLS, Wayne W., Ashland, Oreg.: 14 specimens of crabs and a marine annelid from San Juan Island, Wash. (94231).

WENDAL, Harry, Washington, D. C.: Bald eagle from Maryland (93504).

WENTWORTH, Bertrand H., Gardiner, Me.: 8 pictorial bromides (92840).

WESTERN CARTRIDGE CO., East Alton, Ill.: Display board of ammunition products (165 specimens) (96660).

WESTHOFF, Miss Gisela. (See under Roosevelt Memorial Association (Inc.).)

WESTINGHOUSE LAMP CO., research department, Bloomfield, N. J. (through Dr. H. C. Rentschler): Specimen of chemical for the Loeb collection of chemical types (97035).

WEST TEXAS HISTORICAL AND SCIENTIFIC SOCIETY, Alpine, Tex. (through V. J. Smith): 2 adult Indian skulls, one male and the other female, from Texas (96641).

WEST TOLEDO MINING CO., Alta, Utah (through Victor C. Heikes): Specimen of the lead carbonate ore, cerussite, from the property of the West Toledo Mining Co. at Alta (94605); a 40-pound specimen of cerussite from the property of the West Toledo Mining Co. at Alta (96800).

WETMORE, Dr. A., Washington, D. C.: 3 mammals and 8 birds, with one trunk skeleton, from Maryland (94510).

(See also under B. H. Swales.)

WHEELER, Prof. W. M., Forest Hills, Boston, Mass.: 8 specimens of flies (96037).

WHERRY, Dr. Edgar T., Washington, D. C.: Fern from the District of Columbia (92888); 6 plants (93931, 94491); 3 plants from the southern United States (94107); 1 plant from Virginia (94115); 2 plants from the vicinity of Washington (94489).

(See also under Miss Margaret D. Reese.)

WHITE, Mrs. Clarence H., New York City: 3 photographs by Clarence H. White, as follows: Self Portrait; the Symbolism of Light, and The Tree Toad (97105).

WHITFIELD, R. D., Houston, Miss.: Small lot of pottery fragments and an incomplete female Indian skeleton (92892).

WHITING, Mrs. William Macomb, Washington, D. C.: Part of the flagstaff of the Castle of San Juan de Ulua, Vera Cruz, taken by the American Army, March 20, 1847 (96625).

WHITTALL ASSOCIATES, M. J., Worcester, Mass.: An analysis rug showing steps in the weaving of a Wilton rug (96243).

WILCOX, Joseph. (See under Oregon Agricultural College.)

WILLEY, Prof. Arthur, Montreal, Canada: 2 slides containing the types male and female of a copepod (93163).

WILLIAMS COLLEGE, department of geology, Williamstown, Mass.: 1,000 specimens of fossil invertebrates from the Devonian of Wisconsin, including types and original drawings (94495).

WILLIAMS, Dr. F. X., Honolulu, Hawaii: 8 specimens of aculeate Hymenoptera, including paratypes of 5 species (96413).

WILLIAMS, Lieut. J. H., United States Army, Washington, D. C.: A Dutch silver dollar, issued by the Province of West Friesland, in 1598 (93394).

WILLIAMS, Samuel, Nevis, British West Indies: 37 shells from St. Kitts, British West Indies (92506).

WILLIAMSON, Hon. William. (See under Miss Alice Hollow Horn Bear.)

WILLSIA, Miss Anna, Honesdale, Pa.: Cotton handkerchief bearing a printed facsimile of the Declaration of Independence (96187).

WINDSOR PRESS, THE, San Francisco, Calif.: 3 examples of fine bookmaking: Cupid and Psyche, copy No. 38; William Caxton, copy No. 116; and Letter of Columbus to Luis de Santangel, copy No. 32; also a Christmas broadside, printed and designed by The Windsor Press, 1926 (94347); book entitled "The Press of the Renaissance in Italy," by James S. Johnson, No. 23 of an edition of 200 (96423).

WINTERS, Fred E., Santa Barbara, Calif.: 32 specimens, representing 20 species of beetles, belonging to the family Hydrophilidae (95162).

WISMER, D. G., Hatfield, Pa.: A $40 check on the bank of North America, dated November 28, 1791 (95037).

WISTAR INSTITUTE OF ANATOMY AND BIOLOGY, Philadelphia, Pa. (through Dr. J. M. Greenman): Toad from Borneo (93412, exchange).

WITHERSPOON, Mrs. Thomas A., Washington, D. C.: 2 Joly transparencies and a parallax stereogram (94767).

WOLARIK, John, Washington, D. C.: 3 shells and 6 corals from Hollywood, Fla. (93217).

WOLCOTT, Dr. Grosos N., Port au Prince, Haiti: 22 specimens of Haitian beetles representing 13 species, 5 of which are represented by cotypes (93608).

WOO, F. C., Ithaca, N. Y.: 4 specimens of flies from China (95530).

WOOD, Dr. Casey A., Colombo, Ceylon: Specimen of flycatcher from the Fiji Islands, representing a species new to the Museum collection (94125); 6 skins and 5 skeletons of birds from the Fiji Islands (94498).

WOOD, Dr. Horatio C. (See under Lippincott & Co., J. P.)

WOODBURY, A. M. (See under Dixie College.)

WOODRING, Dr. W. P. (See under Dr. H. G. Kugler, and Dr. C. A. Matley.)

WOODY, C. L., Baltimore, Md.: Specimen of moth (93544.)

WORCH, Hugo, Washington, D. C.: 2 harpsichords in glass cases, one dated 1665 and the other 1690 (93944); German square piano constructed about 1765 (94056); 2 square pianos made about 1810, one marked "G. Astor and Company," London, and the other made in Amsterdam (94008).

WRAY, Mrs. Mabel L., Lawrence, Kans.: A bark cloth blanket from Uganda, Africa, woven cotton blanket from Mandingos, West Africa, and a robe of skin, Zulu Kaffir, from South Africa (93582).

WRIGHT, Mrs. D. B., Winchester, Va.: Fossil shark's tooth, a rubber effigy doll, and a pottery whistle (94349).

WRIGHT, Dr. STILLMAN, Madison, Wis.: 2 copepods, holotype and paratype; 4 copepods from Brasil and Philippine Islands (94067; 96184).

WYATT, Miss GRACE, Nashville, Tenn.: 2 specimens of blind fishes (96286).

WYOMING, UNIVERSITY OF, Department of Botany, Laramie, Wyo.: (through Mr. Edwin B. Payson) 2 plants from Utah (95536, exchange); (through Prof. A. H. Stockhard) 9 specimens of flies (95683).

YALE UNIVERSITY.

School of Forestry, New Haven, Conn. (through Prof. Samuel J. Record): 14 specimens of trees from Central America (91847); 3 fragmentary specimens of plants (92398); 70 plants from British Honduras, collected by H. W. Winzerling (92609, 94058); 73 plants from British Honduras (93157, 93220, 93258, 94210, 94721, 96462); 2 plants from Costa Rica (94060); 2 plants from Guatemala, collected by Mr. Kuylen (94117); 3 plants (94508, 94509); 801 wood specimens, mostly from tropical America (95124, exchange); 246 plants from Central America (95872); 25 plants from Guatemala (96248); plant from Peru (96399); 88 plants from Panama and British Honduras (96782); plant from Honduras (96799); plant from Mexico (96979).

Peabody Museum of Natural History (through Dr. C. O. Dunbar): 98 specimens of fossil crustaceans (95365).

YAO, L., Chusan, Chekiang, China: 12 beetles from China (96933).

ZANETTI, Col. J. ENRIQUE, New York City: Specimen of chemical for the Loeb collection of chemical types (95841).

ZETEK, J., Ancon, Canal Zone: Fragment of a celt found at Santa Maria River, San Francisco, Panama (93185).

ZINC-OID PRINTING PLATE CORPORATION, Rochester, N. Y. (through Alton B. Carty): Engraved Zinc-Oid Econo plate and print from it (95638).

ZOOLOGICAL MUSEUM, ACADEMY OF SCIENCES, Leinigrad, Union of Socialistic Soviet Republics in Europe: 17 small mammals from Russia (94982, exchange).

ZOOLOGICAL MUSEUM, Tring, Herts., England: Pair of blood pheasants from south China (93965, exchange).

ZUNDEL, GEORGE L., Pullman, Wash.: Plant (rust) from Washington (92762).

LIST OF PUBLICATIONS ISSUED BY THE UNITED STATES NATIONAL MUSEUM DURING THE FISCAL YEAR 1926–27

REPORT

Report on the progress and condition of the United States National Museum for the year ending June 30, 1926.

8vo., pp. 1–lx, 1–205, frontispiece.

PROCEEDINGS

Proceedings of the United States National Museum. Volume 67.

8vo., pp. i–xix, 1–972, arts. 1–29, pls. 1–155, 86 figs.

BULLETINS

No. 134. Material culture of the people of southeastern Panama, based on specimens in the United States National Museum. By Herbart W. Krieger.

8vo., pp. i–v, 1–141, pls. 1–37.

No. 135. Life histories of North American marsh birds. Orders Odontoglossae, Herodiones, and Paludicolae. By Arthur Cleveland Bent.

8vo., pp. i–xii, 1–490, pls. 1–98.

No. 136. Handbook of the collection of musical instruments in the United States National Museum. By Frances Densmore.

8vo., pp. i–iii, 1–164, pls. 1–49.

No. 137. The collection of primitive weapons and armor of the Philippine Islands in the United States National Museum. By Herbert W. Krieger.

8vo., pp. i–iii, 1–128, frontispiece (map), pls. 1–21.

No. 138. The fossil stalk-eyed crustacea of the Pacific slope of North America. By Mary J. Rathbun.

8vo., pp. i–vii, 1–155, pls. 1–39, 6 figs.

No. 139. Fire as an agent in human culture. By Walter Hough.

8vo., pp. i–xiv, 1–270, pls. 1–41.

No. 140. Bird parasites of the nematode suborders Strongylata, Ascaridata, and Spirurata. By Eloise B. Cram.

8vo., pp. i–xvii, 1–495, 1–444 figs.

CONTRIBUTIONS FROM THE UNITED STATES NATIONAL HERBARIUM

Vol. 23. Trees and shrubs of Mexico. By Paul C. Standley.

8vo., pp. i–cxxxi, 1–1721.

PAPERS PUBLISHED IN SEPARATE FORM

FROM THE BULLETINS

From No. 100. Contributions to the biology of the Philippine Archipelago and adjacent regions.

Volume 2, Part 5. The shipworms of the Philippine Islands. By Paul Bartsch.
8vo., pp. 533–562, pls. 53–60, 1 fig.

Volume 6, Part 2. Additions to the polychaetous annelids collected by the United States Fisheries steamer *Albatross*, 1907–1910, including one new genus and three new species. By A. L. Treadwell.
8vo., pp. 183–193, 1–20 figs.

Volume 6, Part 3. Report on the hydroida collected by the United States Fisheries steamer *Albatross* in the Philippine region, 1907–1910. By Charles C. Nutting.
8vo., pp. 195–242, pls. 40–47.

From Volume 22.—Contributions From The United States National Herbarium

Part 10. The North American species of Scutellaria. By Emery C. Leonard.
8vo., pp. i–viii, 703–749.

From Volume 23.—Contributions From The United States National Herbarium

Part 5. Trees and shrubs of Mexico. (Bignoniaceae-Asteraceae.) By Paul C. Standley.
8vo., pp. i–ii, 1313–1721.

From Volume 24.—Contributions From The United States National Herbarium

Part 8. The grasses of Ecuador, Peru, and Bolivia. By A. S. Hitchcock.
8vo., pp. i–xx, 291–556.

From Volume 26.—Contributions From The United States National Herbarium

Part 1. The Lecythidaceae of Central America. By H. Pittier.
8vo., pp. i–v, 1–14, pls. 1–12.

Part 2. The Piperaceae of Panama. By William Trelease.
8vo., pp. i–viii, 15–80.

FROM VOLUME 69 OF THE PROCEEDINGS

No. 2630. The collection of ancient oriental seals in the United States National Museum. By I. M. Casanowicz. Art. 4, pp. 1–23, pls. 1–20.

No. 2631. Catalogue of human crania in the United States National Museum collections. The Algonkin and related Iroquois; Siouan, Caddoan, Salish and Sahaptin, Shoshonean, and Californian Indians. By Aleš Hrdlička. Art. 5, pp. 1–127.

No. 2632. A new sea star of the genus Evasterias. By W. K. Fisher. Art. 6, pp. 1–5, pls. 1–2.

No. 2633. Descriptions of new reared parasitic Hymenoptera and some notes on synonymy. (By C. F. W. Muesebeck. Art. 7, pp. 1–18.

No. 2634. Crustaceans of the orders Euphausiacea and Mysidacea from the western Atlantic. By Walter M. Tattersall. Art. 8, pp. 1–31, pls. 1–2.

No. 2635. Review of the American Xylotine Syrphid-flies. By Raymond C. Shannon. Art. 9, pp. 1–52.

No. 2636. The North American two-winged flies of the family Simuliidae. By Harrison G. Dyar and Raymond C. Shannon. Art. 10, pp. 1–54, pls. 1–7.

No. 2637. The Chrysotoxine Syrphid-flies. By Raymond C. Shannon. Art. 11, pp. 1–20, 3 figs.

No. 2638. New land and fresh-water mollusks from Central and South America. By William B. Marshall. Art. 12, pp. 1–12, pls. 1–3.

No. 2639. American two-winged flies of the genus Microphthalma Macquart, with notes on the related forms. By J. M. Aldrich. Art. 13, pp. 1–8.

No. 2640. Classification of the Cheilostomatous bryozoa. By Ferdinand Canu and Ray S. Bassler. Art. 14, pp. 1–42, pl. 1.

No. 2641. Polychaetous annelids from Fiji, Samoa, China, and Japan. By A. L. Treadwell. Art. 15, pp. 1–20, pls. 1–2.

No. 2642. A revision of the parasitic wasps of the subfamily Braconinae occurring in America north of Mexico. By C. F. W. Muesebeck. Art. 16, pp. 1–73, pls. 1–2.

No. 2643. Identity of Hallowell's snake genera Megalops and Aepidea. By Leonhard Stejneger. Art. 17, pp. 1–3.

No. 2644. Notes on the age of the continental Triassic beds in North America, with remarks on some fossil vertebrates. By F. R. von Huene. Art. 18, pp. 1–10, figs. 1–8.

No. 2645. Kentriodon pernix, a Miocene porpoise from Maryland. By Remington Kellogg. Art. 19, pp. 1–55, pls. 1–14, figs. 1–20.

No. 2646. Additional new mollusks from Santa Elena Bay, Ecuador.

FROM VOLUME 70 OF THE PROCEEDINGS

No. 2650. American wasps of the genus Sceliphron Klug. By Bennet A. Porter. Art. 1, pp. 1–22, pls. 1–4.

No. 2651. Descriptions of larvae and pupae of two-winged flies belonging to the family Leptidae. By Charles T. Greene. Art. 2, pp. 1–20, pls. 1–3.

No. 2652. A fossil palm fruit from the Middle Eocene of Northwestern Peru. By Edward W. Berry. Art. 3, pp. 1–4, pl. 1.

No. 2653. New Urocoptid land shells from Mexico. By Paul Bartsch. Art. 4, pp. 1–13, pl. 1.

No. 2654. A collection of birds from the Provinces of Yunnan and Szechwan, China, made for the National Geographic Society by Dr. Joseph F. Rock. By J. H. Riley. Art. 5, pp. 1–70.

No. 2655. Nematode eggs from the gill region of a shark, Carcharhinus milberti. By G. A. MacCallum. Art. 6, pp. 1–2, 1 fig.

No. 2656. Notes on cestode parasites of birds. By Edwin Linton. Art. 7, pp. 1–73, pls. 1–15.

No. 2657. Some braconid and chalcid flies from Formosa, parasitic on aphids. By A. B. Gahan. Art. 8, pp. 1–7.

No. 2658. A review of the South American two-winged flies of the family Syrphidae. By Raymond C. Shannon. Art. 9, pp. 1–34, pl. 1.

No. 2659. On a collection of copepoda from Florida, with a description of Diaptomus floridanus, new species. By C. Dwight Marsh. Art. 10, pp. 1–4, figs. 1–6.

No. 2660. New west American marine mollusks. By Paul Bartsch. Art. 11, pp. 1–36, pls. 1–6.

No. 2661. Tanaodon, a new molluscan genus from the Middle Devonian of China. By Edwin Kirk. Art. 12, pp. 1–4, pl. 1.

No. 2662. Contribution to the anatomy of the Chinese finless porpoise, Neomeris phocaenoides. By A. Brazier Howell. Art. 13, pp. 1–43, pl. 1, figs. 1–14.

No. 2663. A taxonomic and ecological review of the North American chalcid-flies of the genus Callimome. By L. L. Huber. Art. 14, pp. 1–114, pls. 1–4.

No. 2647. Distributional notes on some neotropical bugs of the family Nabidae, with description of a new species. By Halbert M. Harris. Art. 21, pp. 1–4.

No. 2648. Descriptions of new and little known Diptera or two-winged flies. By J. M. Aldrich. Art. 22, pp. 1–26.

No. 2649. Cymbidium, a new genus of Silurian pentameroid Brachiopods from Alaska. By Edwin Kirk. Art. 23, pp. 1–5, pl. 1.

No. 2664. Generic names applied to birds during the years 1916 to 1922, inclusive, with additions to Waterhouse's "Index Generum Avium." By Charles W. Richmond. Art. 15, pp. 1–44.

No. 2665. Foraminifera of the genus Ehrenbergina and its species. By Joseph A. Cushman. Art. 16, pp. 1–8, pls. 1–2.

No. 2666. Description of a new dragon fly from lower Siam belonging to the genus Urothemis. By F. F. Laidlaw. Art. 17, pp. 1–3, pl. 1.

No. 2667. Small shells from dredgings off the southeast coast of the United States by the United States Fisheries steamer *Albatross* in 1885 and 1886. By William H. Dall. Art. 18, pp. 1–134.

No. 2668. Diagnoses of undescribed new species of mollusks in the collection of the United States National Museum. By William Healey Dall. Art. 19, pp. 1–11.

No. 2669. The occurrence and properties of Chlorophoenicite, a new arsenate from Franklin, N. J. By William F. Foshag, Harry M. Berman, and Robert B. Gage. Art. 20, pp. 1–6, figs. 1–2.

No. 2670. A stony meteorite from Forksville, Mecklenburg County, Va. By George P. Merrill. Art. 21, pp. 1–4, pls. 1–3.

No. 2671. Richmond faunal zones in Warren and Clinton Counties, Ohio. By George M. Austin. Art. 22, pp. 1–18.

No. 2672. A revision of the beetles of the genus Oedionychis occurring in America north of Mexico. By Doris Holmes Blake. Art. 23, pp. 1–44, pls. 1–2, fig. 1.

FROM VOLUME 71 OF THE PROCEEDINGS

No. 2673. Description of a new species of fresh-water copepod of the genus Moraria from Canada. By Arthur Willey. Art. 1, pp. 1–12, figs. 1–30.

No. 2674. The beetles of the family Cleridae collected on the Mulford Biological Exploration of the Amazon Basin, 1921–1922. By Edward A. Chapin. Art. 2, pp. 1–10.

No. 2675. On a collection of orthopteroid insects from Java made by Owen Bryant and William Palmer in 1900. By A. N. Caudell. Art. 3, pp. 1–42.

No. 2676. Miscellaneous descriptions of new parasitic hymenoptera with some synonymical notes. By A. B. Gahan. Art. 4, pp. 1–39, pl. 1, figs. 1–3.

No. 2677. A new parasitic nematode from an unknown species of bat. By Benjamin Schwartz. Art. 5, pp. 1–4, figs. 1–4.

No. 2678. A new genus and two new species of South American fresh-water mussels. By William B. Marshall. Art. 6, pp. 1–4, pls. 1–2.

No. 2679. Orthopteroid insects from the Maritime Province of Siberia. (On the insect fauna of the Maritime Province of Siberia.) By A. N. Caudell. Art. 7, pp. 1–7, figs. 1–2.

No. 2680. Larger foraminifera of the genus Lepidocyclina related to Lepidocyclina mantelli. By T. Wayland Vaughan. Art. 8, pp. 1–5, pls. 1–4.

No. 2681. The digger wasps of North America of the genus Podalonia (Psammophila). By H. T. Fernald. Art. 9, pp. 1–42, pls. 1–2, figs. 1–4.

No. 2682. Notes on fishes obtained in Sumatra, Java, and Tahiti. By Henry W. Fowler and Barton A. Bean. Art. 10, pp. 1–15, figs. 1–2.

No. 2683. Notes on the Melitaeid butterfly Euphydryas phaëton (Drury), with descriptions of a new subspecies and a new variety. By Austin H. Clark. Art. 11, pp. 1–22, pls. 1–5.

No. 2684. Megachilid bees from Bolivia collected by the Mulford Biological Expedition, 1921–1922. By T. D. A. Cockerell. Art. 12, pp 1–22.

LIST OF PAPERS BASED WHOLLY OR IN PART ON THE COLLECTIONS IN THE UNITED STATES NATIONAL MUSEUM, PUBLISHED BY THE MUSEUM AND ELSEWHERE DURING THE FISCAL YEAR 1926–27

Aldrich, J. M.

American two-winged flies of the genus Microphthalma Macquart, with notes on related forms: Proc. U. S. Nat. Mus., vol. 69, art. 13, no. 2639, Oct. 15, 1926, pp. 1–8.

Descriptions of new and little known Diptera or two-winged flies: Proc. U. S. Nat. Mus., vol. 69, art. 22, no. 2648, Dec. 27, 1926, pp. 1–26.

A new species of Oedematocera reared from the tropical migratory locust (Diptera): Proc. Ent. Soc. Washington, vol. 29, no. 1, Jan. 1927, pp. 17, 18.

Notes on muscoid synonymy: Bull. Brooklyn Ent. Soc., vol. 22, no. 1, Feb. 1927, pp. 18–25.

Notes on the Dexiid genera Cordyligaster and Encordyligaster: Journ. Washington Acad. Sci., vol. 17, no. 4, Feb. 19, 1927, pp. 84–86.

Chiromyia oppidana Scopoli occurring in the United States (Diptera): Ent. News, vol. 38, no. 3, Mar. 1927, p. 79.

Alexander, Charles P.

New or little known nearctic species of Trichoceridae (Diptera). Pt. 1: Can. Ent., vol. 59, no. 3, Mar. 1927, pp. 66–73, figs. 1, 2.

Amaral, Afranio do.

Studies of neotropical Ophidia (5). Notes on Bothrops lanbergii and B. brachystoma: Bull. Antivenin Inst. America, vol. 1, no. 1, Mar. 1927, p. 22.

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